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OU5 Baseline Human Health Risk Assessment

June 2010
Revised August 2011
Revised March 2012
Revised September 2014

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OU5 Baseline Human Health Risk Assessment

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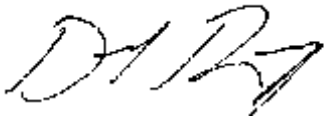

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Acronyms and Abbreviations

ABS	Dermal absorption fraction
ADAF	Age-dependent adjustment factor
AF	Dermal adherence factor
AF_{lead}	Lead absorption fraction
ALM	Adult Lead Model
amsl	above mean sea level
AT	Averaging Time
ATSDR	Agency for Toxic Substances and Disease Registry
BBL	Blasland, Bouck & Lee, Inc.
BERA	baseline ecological risk assessment
beta-BHC	beta-hexachlorocyclohexane
bgs	below ground surface
BKSF	Biokinetic Slope Factor
BLL	blood lead level
BOLA	bottom of lower aquifer
BSL	Background screening level
bss	below substrate surface
CAG	Citizens Advisory Group
CDC	Centers for Disease Control
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
cm^2	square centimeters
cm/sec	centimeter per second
COPC	Chemical of potential concern
CTE	Central Tendency Exposure
cy	cubic yards
DAP	Diammonium phosphate

DL	Detection limit
DSDA	Dredged Spoil Disposal Area
ED	Exposure duration
EF	Exposure frequency
EFH	USEPA Exposure Factors Handbook
EPC	Exposure point concentration
FFS	Focused Feasibility Study
FI	Fraction ingested from site
FPSA	Former Plant Site Area
FRI	Focused Remedial Investigation
ft	feet
GSD	Geometric Standard Deviation
HEAST	Health Effects Assessment Summary Tables
HHRA	Human Health Risk Assessment
HI	Hazard Index
HQ	Hazard Quotient
ICO	Interim Consent Order
IDOC	Illinois Department of Conservation
IDNR	Illinois Department of Natural Resources
IDPH	Illinois Department of Public Health
IEPA	Illinois Environmental Protection Agency
IEUBK	Integrated Exposure Uptake Biokinetic
IRIS	Integrated Risk Information System
IR_{fish}	Fish Ingestion Rate
$IR_{sediment}$	Sediment Ingestion Rate
IR_{soil}	Soil Ingestion Rate
ISGS	Illinois State Geological Survey
ISWS	Illinois State Water Survey

KM	Kaplan Meier
Kp	Dermal permeability coefficients
Lake Park	Village of DePue boat ramp and waterfront park areas
LOAEL	Lowest-Observed-Adverse-Effect-Level
µg/dL	micrograms per deciliter
µg/L	micrograms per liter
m^3/hour	cubic meters per hour
m^3/kg	cubic meters per kilogram
MADEP	Massachusetts Department of Environmental Protection
MCL	Maximum Contaminant Level
mg/cm^2	milligrams per square centimeter
mg/day	milligrams per day
mg/kg	milligrams per kilogram
mg/kg-day	milligrams per kilogram of body weight per day
MRLs	Minimal Risk Levels
MS	Multiple Sclerosis
NHANES	National Health and Nutrition Examination Survey
NOAEL	No-Observed-Adverse-Effect-Level
NPDES	National Pollutant Discharge Elimination System
OSWER	Office of Solid Waste and Emergency Response
OU5	Operable Unit 5
OUs	Operable Units
Outfall 001	Outlet from the DePue WWTP
P10	P10 statistic
PAHs	Polycyclic aromatic hydrocarbons
PbB	Blood Lead Concentration
PbS	Lead concentration in environmental medium
PCBs	Polychlorinated biphenyls

PEF	Particulate emission factor
PPRTVs	Provisional Peer-Reviewed Toxicity Values
Q-Q	Quantile-Quantile
RAGS	Risk Assessment Guidance for Superfund
RBA	Relative bioavailability
RBF	Relative bioavailability factor
RfC	Reference concentration
RfD	Oral reference dose
RI	Remedial Investigation
RI/FS	Remedial Investigation/Feasibility Study
RL	Reporting Limit
RME	Reasonable Maximum Exposure
ROD	Record of Decision
RPD	Relative percent difference
RSL	Regional Screening Level
SA	Skin surface area
SF	Slope Factor
SI	Site Inspection
SPLP	Synthetic precipitation leaching procedure
SQT	Sediment quality triad
SRO	Soil remediation objective
SVOCs	Semi-volatile organic compounds
TACO	Tiered Approach to Corrective Action Objectives
TAL	Target Analyte List
Terra	Terra Environmental, Inc.
TOC	Total Organic Carbon
TOLA	top of lower aquifer
TRW	Technical Review Workgroup

UCL	Upper Confidence Limit
µg/dL	microgram per deciliter
UPL	Upper Prediction Limit
UPSEA	Upland Portion of the Southeast Area
URF	Unit risk factor
USEPA	U.S. Environmental Protection Agency
USFDA	U.S. Food and Drug Administration
USFWS	U.S. Fish and Wildlife Service
UWBZ	upper water bearing zone
WWTP	Waste Water Treatment Plant

1. Introduction

1.1 Purpose and Scope

This baseline human health risk assessment (HHRA) has been prepared by ARCADIS, Inc. (ARCADIS) on behalf of the DePue Group and evaluates potential human health risks associated with Operable Unit 5 (OU5 – DePue Lake Sediments and the Floodplain) at the DePue Superfund Site located in DePue, Illinois (the site). Because of the complexity of the site, the Illinois Environmental Protection Agency (IEPA) has organized the site into the following five operable units (OUs) (IEPA 2003):

- OU1: South Ditch Contaminated Sediments
- OU2: The Phosphogypsum Stack
- OU3: The Former Plant Site Area (FPSA)
- OU4: Offsite Soils
- OU5: DePue Lake Sediments and the Floodplain

The FPSA is a former industrial facility that was used as a primary zinc smelter, a sulfuric acid plant, a lithopone paint pigment manufacturing plant, a diammonium phosphate (DAP) fertilizer manufacturing plant, and a zinc dust plant. In 1983, IEPA and the U.S. Environmental Protection Agency (USEPA) conducted a site inspection (SI) to compile data for use in developing a hazard ranking score for the site. In 1994, IEPA issued a Notice of Response Actions Required Pursuant to Section 4(q) of the Illinois Environmental Protection Act (Notice). Subsequently, Mobil Corporation (n/k/a ExxonMobil Corporation), Horsehead Industries, Inc. (n/k/a HH Liquidating Corp.) and Viacom International Inc. (n/k/a CBS Operations Inc.) (collectively referred to as the "DePue Group") complied with the Notice and completed several response actions and remedial investigations. In 1995, the DePue Group and the State of Illinois entered an Interim Consent Order (ICO) to conduct remedial investigation/feasibility study (RI/FS) activities for the site.

The DePue Group has already completed certain RI and FS activities for portions of the site, including a focused remedial investigation (FRI; Golder Associates, Inc. [Golder] 1997a) and a focused feasibility study (FFS; Golder 1997b) for OU1. Additional site investigations have been conducted by USEPA, IEPA, Illinois Department of Conservation (IDOC), Illinois State Geological Survey (ISGS), Illinois State Water Survey (ISWS), Illinois Department of Natural Resources (IDNR), and Illinois Department of Public Health (IDPH). These investigations and assessments are described in the DePue Lake Remedial

Investigation Report (ARCADIS 2009). RI-related activities conducted by ARCADIS in 2006 and 2007 were intended to build upon the previous investigations and further address requirements of the ICO (Section XII, Item 11 of Attachment 1 and applicable provisions of Attachment 2).

This HHRA was conducted in accordance with the approved DePue Lake Remedial Investigation Work Plan (Work Plan) (ARCADIS BBL 2006) and other interim submittals approved by the IEPA. The HHRA focuses solely on OU5 (see Figure 1-1). The goal of this HHRA is to evaluate potential human health risks posed by site-related constituents in environmental media from OU5. This HHRA has been conducted in accordance with relevant USEPA guidance, and involves the following four steps: 1) data evaluation, to identify site-related chemicals of potential concern (COPCs); 2) exposure assessment, to determine potential exposure pathways and quantify the magnitude of potential exposure; 3) toxicity assessment, to determine types of effects associated with exposures; and 4) risk characterization, to quantify cancer risks and non-cancer health hazards associated with specific exposures at OU5.

Several interim deliverables for the HHRA were submitted to the IEPA for the purpose of obtaining agency approval on HHRA tasks such as the selection of screening criteria and exposure parameters. The following timeline outlines the submittal of these interim deliverables as well as the submittal of previous drafts of the OU5 HHRA report.

- May 2003 – ARCADIS (formerly Blasland, Bouck, and Lee, Inc. [BBL]) submitted a technical memorandum to IEPA outlining the proposed approach for the screening process to identify COPCs.

- June 2003 – IEPA submitted written comments on COPC technical memorandum.

- August 2003 – ARCADIS provided responses to IEPA comments on COPC technical memorandum.

- April 2009 – ARCADIS submitted a technical memorandum to IEPA that outlines the overall approach for the baseline HHRA (i.e., selection of receptors and exposure pathways, selection of exposure factors, COPC screening approach, methodology for calculation of exposure point concentrations [EPCs], and hierarchy for selection of toxicity values).

- June 2009 – IEPA submitted written comments on HHRA interim deliverable.

- November 2009 – ARCADIS provided written responses to IEPA comments on HHRA interim deliverable and a revised interim deliverable.

- January 2010 – IEPA submitted written comments on revised HHRA interim deliverable (IEPA 2010).
- February 2010 – ARCADIS provided written responses to IEPA comments on revised HHRA interim deliverable.
- March 2010 – IEPA submitted written comments on revised HHRA interim deliverable.
- May 2010 – ARCADIS provided written responses to IEPA comments on revised HHRA interim deliverable.
- June 2010 – ARCADIS submitted draft HHRA to IEPA.
- November 2010 – IEPA submitted written comments on draft HHRA.
- December 2010 – ARCADIS provided written responses to IEPA comments from November 2010.
- February 2011 – IEPA submitted written comments to ARCADIS responses from December 2010.
- March 2011 – ARCADIS provided written responses to IEPA comments from February 2011.
- June 2011 – Village Citizens Advisory Group (CAG) provided comments on draft HHRA to IEPA.
- August 2011 – ARCADIS submitted revised HHRA to IEPA.
- September 2011 – IEPA submitted written comments to ARCADIS on behalf of CAG.
- November 2011 – IEPA submitted written comments on revised HHRA from August 2011.
- December 2011 – ARCADIS provided written responses to IEPA comments from November 2011.
- December 2011 – ARCADIS provided written responses to IEPA/CAG comments from September 2011.

- January 2012 – IEPA submitted written comments to ARCADIS responses from December 2011.

- March 2012 – ARCADIS submitted revised HHRA to IEPA.

- July 2012 – IEPA submitted written comments on revised HHRA from March 2012.

- August 2012 – ARCADIS submitted written responses to IEPA comments from July 2012.

- August 2014 – IEPA provides direction on blood lead benchmark (personal communication, August 7, 2014 email from Charlene Falco, IEPA, to Wilmer Reyes, CBS)

1.2 Site Description

The site is located in the Village of DePue, Bureau County, Illinois, in Sections 25, 26, 35, and 36 of Township 16 North, Range 10 East (Figure 1-1). The specific area of the site addressed in this HHRA is defined as OU5, which includes DePue Lake and the lowland areas surrounding the lake up to an elevation of 450 feet above mean sea level (amsl) (Figure 1-2).

1.2.1 DePue Lake

DePue Lake is an approximate 500-acre former oxbow associated with the Illinois River that lies south of the FPSA and the Village of DePue. The lake is owned by the State of Illinois, except for the northeastern portion, which is owned by ExxonMobil Corporation. DePue Lake is connected at its western end to the Illinois River via a narrow, shallow channel and is separated from the Illinois River along the remainder of its length by a low-lying peninsula. The DePue Wildlife Management Area occupies a portion of the peninsula. In 1982 and 1983, IDOC conducted dredging operations in DePue Lake to accommodate power boat racing (ISGS/ISWS 2002). Approximately 450,000 cubic yards (cy) of sediment were removed from an oval-shaped area south of the Village of DePue boat ramp and waterfront park areas (i.e., Lake Park) and placed in a Dredged Spoil Disposal Area (DSDA; Terra Environmental, Inc. [Terra] 1996) (Figure 1-2). Negro Creek is located east of DePue Lake and enters the Illinois River. According to anecdotal reports, in approximately 1945, the creek was re-routed to enter the eastern end of DePue Lake. However, re-routing the creek increased the turbidity levels in the lake, and in 1976, the Village of DePue decided to reroute discharge of Negro Creek back to the Illinois River.

The sediment within DePue Lake is characterized as silty clay, with higher quartz content nearer to the Illinois River (ISGS/ISWS 2002). The lake is a depositional area with sediment depths of up to 10 feet. The thick, fine-grained sediment indicates the relative stagnancy of a depositional lake or river oxbow as it gradually fills in during the succession from open water to wetland. Additional information regarding the physiology, hydrogeology, and hydrology of DePue Lake is presented in the RI Report (ARCADIS 2009).

1.2.2 Lowland Areas

IEPA (2005) identified the lowland portion of the site as the floodplain surrounding DePue Lake up to an elevation of 450 feet amsl; this area of the site is the focus of this HHRA. These lowland areas are seasonally inundated as a result of fluctuating water levels in DePue Lake. Areas of the lowland are classified as emergent, scrub-shrub, and forested wetlands by the U.S. Fish and Wildlife Service (USFWS 1987). In addition, some of the lowland areas to the south include agricultural areas.

Specific areas within the lowland portion of the site include: 1) South Ditch (OU1) and the Lowland Portion of the Southeast Area; 2) the spring area west of the former Settling Ponds; 3) the Division Street outfall; 4) the DePue wastewater treatment plant (WWTP); 5) the Southwest Drain and Unnamed Tributary; and 6) the wildlife management area, including the DSDA, south of DePue Lake (Figure 1-2).

1.2.2.1 South Ditch (OU1) and the Lowland Portion of the Southeast Area

The South Ditch (OU1) flows through the Lowland Portion of the Southeast Area. The South Ditch consists of a drainage channel that begins south of Marquette Street, flows north-to-south through the central portion of the Southeast Area, and ends at DePue Lake. The northernmost 150 feet of the South Ditch are located within the Upland Portion of the Southeast Area, and the remainder is located within the Lowland Portion of the Southeast Area. The South Ditch appears to have been created in its current location when the original railroad bed and culvert were installed in the 1800s prior to development of the FPSA. Historically, the South Ditch received surface water runoff from farm fields, and stormwater and groundwater from the FPSA. Sediment within the South Ditch was described as an unnatural precipitate material (Golder 1997a). Study results suggested that approximately 7,900 cy of unnatural sediment were present in the South Ditch (Golder 1997a). A Record of Decision (ROD) was issued on October 3, 2003 by IEPA for the South Ditch, and USEPA issued a ROD concurrence letter on October 8, 2003. The preferred remedial alternative presented in the ROD is removal of unnatural sediment with on-site disposal. The OU1 interim remedial activities were completed in 2005.

1.2.2.2 Spring Area West of the Former Settling Ponds

The area west of the former Settling Ponds is a topographic depression into which groundwater seeps and springs discharge water that runs southward along the ground surface en route to DePue Lake. This area was identified due to its proximity and potential hydraulic connection to the FPSA.

1.2.2.3 Division Street Outfall Area

The Division Street outfall area is located approximately 1,700 feet west of the South Ditch (OU1). This area includes the 36-inch Division Street outfall from the FPSA, which runs north-south from the FPSA, down Park Street, then turns west in the alley north of South Street to an open outfall in the lowland area south of Division Street. The date of construction for the Division Street outfall is not precisely known, but the line appears to have been in place by 1907. This north-south trending outfall discharged water from the FPSA until approximately 1971. The outfall currently receives surface water runoff from a residential area south of Marquette Street. The outfall also receives intermittent runoff from a small area of the FPSA near the fence east of the power substation where the Division Street outfall pipe is exposed in a short length of a shallow ditch. A sewage-like odor was observed in the outfall pipe during the RI field reconnaissance, indicating that there may be some active connections to the outfall. Water from the outfall infiltrates into the lowland soils and/or drains across the lowland areas into DePue Lake.

1.2.2.4 DePue Wastewater Treatment Plant

The Village of DePue WWTP is located southwest of the Village of DePue. According to the National Pollutant Discharge Elimination System (NPDES) Permit Program Fact Sheet (IEPA undated), the design average flow for the facility is 480,000 gallons per day. Inputs to the lake from the DePue WWTP include treated residential and industrial wastewater and urban runoff/storm water. After 1971, inputs to the DePue WWTP also included discharged wastewater from the FPSA, which was treated and discharged to the lake. The outlet from the DePue WWTP (outfall 001) discharges to DePue Lake southwest of the Village of DePue (Figure 1-2).

1.2.2.5 Southwest Drain and Unnamed Tributary

From approximately 1923 until the mid-1950s, water from the southwest portion of the FPSA was discharged to a sewer that conveyed the water south across Marquette Street at the southwest corner of the FPSA, then west along the north side of the railroad rights-of-way to an open drainage ditch that discharged to the Unnamed Tributary. The Unnamed Tributary also receives drainage from an intermittent creek that flows through forested

areas along IL Rte 29, then south along the west side of East Street and into and through a tunnel below the residential area west of the FPSA. The Unnamed Tributary enters DePue Lake approximately 1,000 feet southwest of the DePue WWTP outfall (Figure 1-2).

1.2.2.6 DePue Wildlife Management Area

The DePue Wildlife Management Area includes the peninsula located along the southern border of DePue Lake that separates the lake from the Illinois River. This area consists of wooded and agricultural areas, with some of the land privately owned and some owned by the State of Illinois. The DSDA is also located on the peninsula and has been the subject of several previous investigations (ISWS 2001; Anderson et al. 2002, Levengood and Skowron 2000, Levengood et al. 1999, Levengood et al. 2003). The berms surrounding the DSDA are above 450 feet amsl, and the DSDA is not considered a portion of OU5.

1.3 Physiographic Setting

This section describes the physiographic setting of DePue Lake and the surrounding lowland areas. Specifically, this section includes discussions of the hydrogeology and hydrology of the DePue site, including OU5.

1.3.1 Hydrogeology

Groundwater investigations at OU2 (Phosphogypsum Stack) and OU3 (FPSA) have been completed. The OU2 and OU3 groundwater investigations have included, but are not limited to, the following activities:

- Installation of additional monitoring wells in OU2, OU3, and the Village of DePue;
- Periodic sampling of the new and existing monitoring wells to evaluate concentration trends in groundwater;
- Collection of lithologic data;
- An evaluation of the thickness, nature, and effectiveness of the aquitard;
- An evaluation of the permeability of the aquitard, Upper Water-Bearing Zone (UWBZ), and lower aquifer;
- Monitoring and sampling of shoreline seeps; and

- Monitoring of groundwater elevation and the corresponding surface elevation of DePue Lake and the Illinois River.

The groundwater studies were designed to obtain additional information to further evaluate the extent of groundwater impacts and the hydrogeologic setting of the area including groundwater interaction with DePue Lake. The results of the OU3 groundwater investigation were presented in the "Phase II Remedial Investigation Report" dated February 2014 (ENVIRON 2014) and the results of the OU2 investigation activities were presented in the "Phase I/II/III Hydrogeological and Supplemental Investigation Report for Operable Unit 2" dated September 11, 2013 (Terra 2013).

Available information for the FPSA indicates the near-surface hydrogeologic system in the vicinity of the FPSA consists of the UWBZ and a lower aquifer. These zones are separated by an aquitard. The UWBZ corresponds to permeable saturated zones within the surficial alluvial soils and fill materials that lie above the peat and the lower permeability silt and clay soils of the recent alluvium. The UWBZ is located in the Slag Pile Area, the Upland Portion of the Southeast Area, the Lithopone Ridges Area, and portions of the Eastern Area of the FPSA, extending as deep as 20 feet from the ground surface in some areas (the water table is generally located between 2 and 16 feet below ground surface [bgs]). This zone is highly heterogeneous and is made up in different locations of slag, lithopone waste, general fill and native material present above the peats, clays and silts. Hydraulic conductivity of the UWBZ is highly variable and generally ranges from 10^{-1} to 10^{-5} centimeters per second (cm/sec). The UWBZ is separated from the lower aquifer by an aquitard consisting of less than 1 foot to 28 feet of low-permeability silt, clay and peat. The peat/aquitard unit was not encountered at Phase II soil borings SB-11 and SB-38 and Phase I RI soil boring J-7 located in the southwest portion of the Slag Pile Area. The mean vertical hydraulic conductivity of this material is approximately 10^{-7} cm/sec.

The Lower Aquifer corresponds to the low terrace outwash deposits of the Henry Formation beneath the recent deposits and above the bedrock, and includes the contiguous outwash deposits of the Sankoty Sand Member beneath the Bluff Area, that may extend southward into the FPSA. The upper portion of the Lower Aquifer generally consists of sandy gravel or gravelly sand with little to no fines. However, the transition between the recent deposits and the Lower Aquifer contains more fine-grained units than the typical coarser-grained Lower Aquifer sands and gravels. Based on soil grain sizes, these transition soils are likely recent deposits. However, because they are, at some locations, the first water-bearing units below the Aquitard in direct contact with the outwash deposits, these soils are considered hydrostratigraphically to be part of the Lower Aquifer. The lower portion of the Lower Aquifer is sand with little fine material or gravel. Clay is nearly absent from the unit. Due to the absence of fine-grained materials and the coarseness of the deposits, the upper and lower zones of the Lower Aquifer form

a single, hydraulically continuous and relatively permeable hydrostratigraphic unit. The unit is about 50 to 60 feet thick near the base of the Bluff, and thins to a thickness of approximately 10 to 30 feet in the Southeast Area. The entire thickness of the Lower Aquifer is saturated. The Lower Aquifer has been further subdivided into the top of the lower aquifer (TOLA) and the bottom of the lower aquifer (BOLA).

The hydraulic conductivity of the unit increases from approximately 10^{-3} cm/sec in the TOLA to 10^{-2} cm/sec in the BOLA. Groundwater flow in the lower aquifer is generally to the south. The lower aquifer and/or the UWBZ appear to be the source of water to the shoreline seeps (ENVIRON 2014).

The bedrock consists of shale, sandstone and/or limestone of the Carbondale or Modesto Formations underlying the glacial deposits throughout the entire DePue area at an elevation of approximately 395 to 420 feet amsl. Borings completed during completion of the OU3 Phase I and Phase II RIs were terminated upon reaching bedrock. Claystone, shale, sandstone, limestone and coal were observed at the top of this unit in the Phase I and Phase II RI soil borings. As discussed in previous documentation for OU2, the bedrock surface is a confining bed and provides a vertical boundary for groundwater impact.

Higher permeability bedrock aquifers used as the source for the Village of DePue public water supply occur in sandstones and dolomites at depths of approximately 1,500 feet bgs. The bedrock aquifers are hydraulically isolated from the UWBZ and lower aquifer. According to IEPA's Source Water Assessment Program Fact Sheet for DePue (IEPA 2011), the IEPA has determined that the DePue Community Water Supply's source water is not susceptible to contamination.

Discharge from the UWBZ to DePue Lake is through seeps along the southern fill boundary of the Upland Portion of the Southeast Area (UPSEA) and through South Ditch. Based on the data obtained during the Phase II RI, it appears that when the Illinois River and DePue Lake are at flood stage, the UWBZ immediately adjacent to DePue Lake may receive some recharge from DePue Lake for a short period of time. However, reversals in groundwater flow away from the lake do not appear to occur.

1.3.2 Hydrology

DePue Lake has several surface water inputs that may influence surface water currents and sediment deposition patterns. Surface water sources may represent historical or ongoing sources of constituents to the lake. As part of the RI (ARCADIS 2009), potential surface water sources to the lake were identified and investigated through site reconnaissance (i.e., a walking survey throughout the lowland areas) and a review of storm sewer maps, aerial photographs, topographic maps, and other related information. Potential surface water

sources to DePue Lake include the Illinois River, Division Street outfall, South Ditch, WWTP outfall, the unnamed tributary, and other springs and seeps that were identified.

A shoreline seep investigation was conducted concurrently with the surface water input investigation in 2006 as part of RI activities. A walking survey was conducted by the field crew throughout the lowland areas of DePue Lake, including the entire shoreline of the lake. Seeps were identified based on visual observations (e.g., the presence of standing water, soil staining or changes in vegetative species composition). Seeps and springs identified during the RI were generally iron-stained or saturated soil and the flow varied from no perceivable flow to a visual estimate of several gallons per minute. As described further in the ENVIRON (2014) Phase II Remedial Investigation Report for OU3: On-Site Soils and Groundwater, it is expected that the source water for some of the seeps is the lower aquifer and/or the UWBZ.

Two underwater seep surveys were also conducted in July/August 2006 and October 2006. These surveys involved recording measurements of temperature and conductivity throughout DePue Lake. Differences in these parameters can be significant enough to identify gaining areas within a surface water body, and may indicate an area of groundwater discharge (USGS 1998). The survey results did not provide evidence of possible underwater groundwater influence. However, in January and February 2007, IEPA took several photographs of the ice on DePue Lake and concluded that areas that were resistant to freezing could possibly indicate warmer groundwater flow into the lake. Therefore, IEPA requested underwater seep survey activities in this area of the lake. A comparison of the underwater seep data to DePue Lake surface water data indicate that chemical concentrations are similar except for underwater seep sample USW-4, which had higher concentrations of select metals (i.e., aluminum, chromium, iron, nickel, and vanadium). However, temperature and conductivity readings from the underwater seep survey do not provide clear evidence of underwater groundwater flow into DePue Lake.

1.4 Land Use

Surrounding land use in the Village of DePue is a mix of residential and commercial properties. The majority of the floodplains surrounding DePue Lake to the east, south, and west are undeveloped. Use of DePue Lake and the surrounding floodplain is generally restricted to recreational activities, such as wildlife observation, hunting, and boating, with the exception of the agricultural area located on the peninsula between DePue Lake and the Illinois River. The agricultural area is used to grow crops for livestock feed. There is a Village Park located on the north shore of DePue Lake that includes a boat launch and recreational facilities (e.g., playground, picnic areas).

Receptors that may be exposed to site-related constituents in environmental media from OU5 are adolescent trespassers, Village Park recreational users (adults and children), lake-wide recreational users (adults and children), boaters (adults and children), anglers (adults and children), Village Park maintenance workers, utility maintenance workers, wildlife workers and hunters, and farmers. Table 1 presents a summary of the exposure pathways evaluated in this HHRA for OU5; exposure pathways are discussed further in Section 3.

1.5 Exposure Areas

Professional judgment was used to identify exposure areas for specific receptors based on observations of exposure potential. In consultation with IEPA, information used to develop the exposure areas in the HHRA included proximity to source areas and outfalls, similarity in the identity and concentrations of detected chemicals, accessibility, and potential activity patterns of receptors, as well as site-specific knowledge from IEPA and the IDNR wildlife managers and those acquired during site visits. For example, the Village Park recreational user is identified to be an individual who frequents the Village Park and would therefore be exposed to media in the vicinity of the park. Likewise, wildlife workers and hunters would be expected to frequent the more remote portions of the floodplain, e.g., during installation of wood duck boxes and duck blinds and hunting. Sample groupings for each exposure area were submitted to IEPA as part of an interim deliverable and adjustments to these sample groupings were made at the request of IEPA (e.g., reassignment of seep sample locations SP-04 and SP-05 from Floodplain Area 1A to Floodplain Area 1B to more accurately represent the receptors and exposures that likely occur in this area).

1.6 Previous Human Health Investigations

In September 1993, the IDPH, the Bureau County Health Department, and IEPA conducted lead and cadmium screening of volunteers from the DePue community. The purpose of this biological screening was to learn if an immediate public health hazard existed. Blood and urine samples were collected and analyzed for cadmium and lead. In total, 110 individuals volunteered for the screening. Of the 110 individuals screened, only one child had an elevated blood lead level. One senior citizen had an elevated urine cadmium level, and one other adult had an elevated blood cadmium level. For each of these individuals, non-site related workplace and residential metal sources were identified. Another study conducted by IDPH (1996) concluded that there is no clinical evidence to support the theory that zinc exposure is an environmental cause of multiple sclerosis (MS). No immediate public health hazards were indicated by these two studies (ASTDR 2009).

1.7 Report Organization

The data evaluation (Section 2) uses appropriate human health-based screening criteria to identify COPCs for the media of interest. The evaluation of lead is also presented in Section 2. The exposure assessment (Section 3) discusses potential exposures to site-related COPCs in environmental media based on land use at the site. The toxicity assessment (Section 4) identifies toxicity values used in the quantification of potential risks and hazards. The risk characterization (Section 5) presents the quantification of potential risks and hazards for each receptor. An uncertainty analysis is presented in Section 6. Summary and conclusions of this HHRA are presented in Section 7. Finally, Section 8 lists the references cited in this HHRA.

2. Data Evaluation

This section briefly describes the datasets used to derive EPCs and the methodology for identifying COPCs.

2.1 Analytical Data

The analytical data evaluated in this HHRA were those collected during the most recent RI activities in 2006 and 2007, and also included supplemental floodplain soils data collected in 2010. The HHRA utilizes these data because they best represent current conditions at the site. Data for the HHRA were handled consistent with those methodologies identified in the RI (ARCADIS 2009). Specifically, validated data were used in the HHRA. Rejected data (i.e., "R" qualifier) were not used in the HHRA; "U" qualified data were treated as non-detects; and other qualified data (i.e., B, D, E, J, N, P, and X) were treated as estimated values and included in the HHRA. Some of the detection limits (DLs) for surface water and fish fillet data were elevated above screening criteria. In this case, as part of the COPC screening (discussed further in Section 2.2) if there were no detects in the dataset, the DL was compared to the screening criteria. However, if estimated (i.e., "J" qualified) data were available, these concentrations were used for comparison with screening criteria. The following subsections discuss the analytical data for each medium.

2.1.1 DePue Lake Floodplain Soil

Floodplain soil samples were collected in 2006 and 2007 along transects placed around the perimeter of DePue Lake. Twenty-one soil sampling transects were established around the lake (LL-1 through LL-21), as depicted in Figures 2-1 and 2-2. Eighty-three surface soil (0 – 0.5 feet bgs) samples were collected and analyzed for Target Analyte List (TAL) metals and cyanide; nine of these samples were additionally analyzed for semi-volatile organic compounds (SVOCs) (including polycyclic aromatic hydrocarbons [PAHs]), polychlorinated biphenyls (PCBs), and pesticides. Eighty subsurface (0.5 – 2 feet bgs) soil samples were collected and analyzed for TAL metals and cyanide; nine of these samples were additionally analyzed for SVOCs (PAHs), PCBs, and pesticides. Eighteen soil samples were also analyzed for synthetic precipitation leaching procedure (SPLP). Twelve soil samples were collected from the agricultural area located on the peninsula between DePue Lake and the Illinois River and analyzed for TAL metals and cyanide.

Supplemental soil sampling was conducted in September 2010 in an effort to determine the extent of PAHs in the floodplain area east of DePue Lake, specifically around location LL-16-2. The RI sampling conducted in 2006 identified a total PAH result of 65 milligrams per kilogram (mg/kg) in a surface soil sample (0 to 0.5 feet [ft]) at location LL16-2. This PAH result was approximately 6 times higher than any other PAH detection in floodplain soil.

Therefore, additional soil samples were collected from and around the original sample location to confirm the previous results and to further evaluate the overall extent of the PAH concentrations observed in surface soil near that location. Five additional surface soil samples (0 – 0.5 ft) were collected: one at the original location, LL-16-2 (renamed LL-16-2A), and four samples 20 feet in each cardinal direction (north, south, east, and west) from the center point of LL-16-2. These 2010 floodplain soils data for location LL-16-2 were used to supplant the PAH data for this location collected in 2006.

2.1.2 DePue Lake Sediment

Sediment sampling for DePue Lake was conducted in 2007, and included sediment quality triad (SQT) samples, shallow (0 – 2 feet below substrate surface [bss]) sediment samples, and deeper sediment cores (Figure 2-3). The SQT investigation was conducted at 16 locations within DePue Lake, and included co-located sediment chemistry samples (including TAL analyses and PAHs, PCBs, pesticides), sediment toxicity testing and benthic macroinvertebrate survey. Shallow sediment samples were collected from 78 locations in DePue Lake using a grid sampling pattern. (Deeper core samples [including three geochronology cores] were also collected at 23 of these locations, but these deeper data are not evaluated in this HHRA due to lack of exposure potential.) Discrete sediment samples were analyzed for TAL metals and cyanide, and general sediment chemistry parameters (i.e., pH, total organic carbon [TOC], moisture content). Five additional sediment samples were collected along the north shore of DePue Lake, near the Village Park. In addition to TAL metals, these samples were analyzed for PAHs, PCBs, pesticides, cyanide, fluoride, and using SPLP. A total of 237 sediment samples were collected and analyzed for TAL metals and cyanide; 32 samples were additionally analyzed for SVOCs, PCBs, and pesticides. These shallow sediment samples from OU5 apply to this HHRA.

2.1.3 DePue Lake Surface Water

Surface water samples were collected from 10 locations in DePue Lake in 2006 and 2007 (Figure 2-4). Two separate sampling rounds of ambient surface water sampling (low flow and high flow) were performed. Sampling during both low flow and high flow conditions was conducted to evaluate any differences in concentrations or in possible transport mechanisms that may be related to flow. A total of 18 samples (filtered and non-filtered) were collected and analyzed for TAL metals, cyanide, and miscellaneous parameters (ammonia, chloride, fluoride, nitrate as N, phosphate, phosphorus, sulfate, and sulfide). Several surface water sampling locations were in the vicinity of surface water discharges to the lake (i.e., SW-7 through SW-10).

2.1.4 DePue Lake Groundwater Seeps

A shoreline seep investigation was conducted by BBL in July 2006; this investigation included a walking survey to visually identify groundwater seeps within the lowland areas surrounding DePue Lake. Specifically, seeps were identified based on visual observations such as the presence of standing water, soil staining, or changes in vegetation (e.g., species composition). Sediment and surface water samples were collected in 2007 from 10 shoreline seep locations identified along the north shore of DePue Lake (Figure 2-5). Surficial (0 – 0.5 feet bss) sediment samples were analyzed for TAL metals and cyanide. Surface water samples (filtered and non-filtered) were analyzed for TAL metals, cyanide, and miscellaneous parameters (ammonia, chloride, fluoride, nitrate as N, phosphate, phosphorus, sulfate, and sulfide).

2.1.5 DePue Lake Fish

Resident fish were collected from three target areas within DePue Lake: 1) the eastern portion of the lake, 2) the central portion of the lake, and 3) the western portion of the lake (Figure 2-6). Fillet data were used in the HHRA to evaluate the fish consumption pathway and quantify potential risks and hazards because the fillet is considered to represent the standard edible portion of the fish. An evaluation of potential whole-body fish consumption is included in the uncertainty analysis because there are no available data that indicate consumption of whole fish carcasses is occurring at the site. A total of 45 fish fillet samples were analyzed for TAL metals. Fish species that were collected included freshwater drum, bluegill, bullhead, carp, and catfish.

2.1.6 Background Sampling

Goose Lake was selected as the site-specific background location for the RI. Goose Lake is located northwest of Lacon, Illinois and is part of the Marshall State Fish & Wildlife Area. The lake is located approximately 20 miles downstream of DePue Lake, and has not been impacted by activities at the site. Goose Lake is a backwater lake located on the west side of the river in the Peoria Pool of the Illinois River near River Mile 190 (Figure 2-7). As with DePue Lake, Goose Lake is connected to the Illinois River at its downstream end, and based on reconnaissance work, was found to also have comparable water depths, mud flats, surrounding land use, and habitat types. Floodplain soil, sediment, surface water, and fish were collected from Goose Lake. These background data were used in the COPC screening process (as described below in Section 2.2.1) and the risk characterization portion of the HHRA to place site-related risks and hazards into perspective.

2.1.6.1 Selection of Background Location

Turner Lake was originally identified by ISGS/ISWS as a suitable background location for previous DePue Lake studies, and was originally identified in the RI Work Plan to be sampled as the reference location. However, due to access issues, Turner Lake could not serve as the site-specific background location, and an alternate location needed to be selected. The U.S. Army Corps of Engineers navigational charts for the Upper Illinois River indicate there may be no upstream lakes comparable to DePue Lake other than Turner Lake. Upstream of DePue, the floodplain is much narrower, existing lakes are much smaller, are not connected to the river, have man-made canals connected to them, or are formed from excavation such as gravel pits. Therefore, a search for comparable background locations was conducted for areas downstream from DePue.

According to USEPA (1994), "(a) general guideline is to select reference locations that reflect the overall environmental conditions that can reasonably be expected in the site area given current uses other than those associated with the contamination under investigation." As such, the background areas for OU5 should have similar physical, chemical, and biological conditions to DePue Lake and the lowland areas. For example, surrounding land use for the background location should include undeveloped, residential/commercial, and agricultural areas. The background lake should be relatively shallow, have relatively little freshwater input, and have similar sediment characteristics (a soft mud bottom). Characteristic parameters, including temperature, chemistry (dissolved oxygen, acidity, hardness, and nutrient concentrations), depth, and intensity and depth of light penetration, should also be similar. Soil conditions adjacent to the background lake should have similar organic matter content, chemistry, and hydrologic regime.

Given an understanding of these requirements and in consultation with IEPA, a search was conducted to identify an alternate background location. The search included a list of approximately twelve candidate locations, and a field reconnaissance of each location to evaluate similarity to DePue Lake. Following the reconnaissance, Goose Lake was selected as the background location based on its similar characteristics to DePue Lake. Goose Lake is located approximately 20 miles downstream of DePue Lake, and similar to DePue Lake is a backwater lake associated with the Illinois River. According to IEPA (personal communication, Rich Lange dated September 6, 2006), for background the best overall alternative is Goose Lake in the Marshal State Fish & Wildlife Area. This lake is immediately upstream of Lacon on the west side of the river; it has comparable water depths, mud flats, surrounding land use, cover and habitat types, and the basic chemistry of the sediments appears appropriate for work at DePue. The use of Goose Lake as an appropriate reference location was approved by IEPA in September 2006.

2.1.6.2 Goose Lake Floodplain Soil

Soil samples were collected from 10 locations around Goose Lake in 2006 to establish background concentrations (Figure 2-8). These samples were randomly placed in the field with concurrence by IEPA to represent a range of elevations and lowland characteristics.

Consistent with the DePue Lake lowland areas soil sampling, soil samples from the Goose Lake area were collected from 0 to 0.5 and 0.5 to 2.0 feet bgs. Each of the soil samples were analyzed for TAL metals and supporting general chemistry and physical parameters (i.e., pH, TOC, moisture content), and for PAHs, PCBs, pesticides, cyanide, fluoride, and additional miscellaneous parameters (sulfite, sulfate, sulfide, total carbon, total Kjeldahl nitrogen, total phosphorus, phosphate, SPLP, and grain size).

2.1.6.3 Goose Lake Sediment

Sediment samples were collected from ten locations in Goose Lake in 2007 (Figure 2-8). The samples included triad samples from five locations; sediment core samples from three locations, and surface sediment samples from two locations. A total of 36 sediment samples were collected from 0 to 2 ft bgs, and were analyzed for TAL inorganic constituents and general sediment parameters (i.e., pH, TOC, moisture content). Eight of the sediment samples were also analyzed for PCBs, pesticides, PAHs, cyanide, and fluoride.

2.1.6.4 Goose Lake Surface Water

Surface water samples were collected from two locations during high flow and low flow conditions (Figure 2-8). Surface water sampling was performed in Goose Lake during the same two flow events as the DePue Lake surface water sampling, one during a period of low water level in October 2007, and one during a flood stage in September 2006. Sampling during both low flow and high flow was conducted to evaluate any differences in concentrations or in possible transport mechanisms that may be related to flow. Both filtered and unfiltered surface water samples were collected from each location. Each of the surface water samples were analyzed for TAL metals and supporting general chemistry and field parameters.

2.1.6.5 Goose Lake Fish

Thirteen fish fillet samples were collected from Goose Lake in 2007 and submitted for analysis of TAL metals. Fish sampling for Goose Lake focused on the central portion of the lake (Figure 2-8). Fillet samples consisted of freshwater drum, black bullhead, yellow bullhead, channel catfish, common carp, and bluegill. An evaluation of potential whole-body fish consumption is included in the uncertainty analysis to place site risks into perspective.

2.2 Human Health Constituents of Potential Concern

The first step of this HHRA consists of a data evaluation to identify COPCs. Human health COPCs were identified using a step-wise process that was developed in consultation with IEPA. Specifically, a technical memorandum describing the COPC screening process was submitted to the IEPA on May 7, 2003, to which the IEPA provided comments on June 18, 2003. ARCADIS (formerly BBL) submitted responses to the IEPA comments on August 14, 2003. The COPC screening process conducted as part of this HHRA used screening criteria recommended by the IEPA. As a first step, hypothesis testing was conducted on the DePue Lake and Goose Lake datasets to identify those constituents with significant differences in concentrations. If hypothesis testing could not be conducted on a dataset due to sample size constraints, background screening levels (BSLs, which represent Upper Prediction Limits [UPLs] for Goose Lake) were used as a benchmark for site data. If site concentrations were greater than background, Step 2 of the COPC screening process consisted of comparing site data to conservative screening criteria (detailed below in Section 2.2.2). Figures 2-9 through 2-12 present flowcharts that depict the COPC screening process for soil and sediment (direct contact), the soil-to-groundwater pathway, surface water (direct contact), and ingestion of fish, respectively.

2.2.1 Hypothesis Testing and Background Screening Levels

Hypothesis testing was conducted on DePue Lake and Goose Lake datasets as a first step in the COPC screening process. Specifically, hypothesis testing was conducted separately for each medium and exposure area identified in the HHRA (exposure areas are identified below in Section 2.2.3). Hypothesis testing was used as the primary tool to determine if there are significant differences between DePue Lake and Goose Lake datasets, and for those datasets with eight or more detected results. For datasets with fewer than eight detected results, site data were compared to BSLs, which represent UPLs. If a UPL could not be calculated, the maximum detected concentration was used as the BSL. The information gained from the hypothesis testing and comparison of DePue Lake data to BSLs was used in the COPC screening process for the HHRA. Appendix A presents the methodology for hypothesis testing and calculation of BSLs, and the results of the hypothesis testing.

The outlier analysis is discussed in Section 2.4. Briefly, an outlier analysis was conducted to identify measurements that were extremely large or small relative to the rest of the data and therefore were suspected of misrepresenting the population from which they were collected (USEPA 2006). The identification of outliers is particularly important because summary statistics (e.g., Upper Confidence Limits [UCLs], UPLs) can be biased by the presence of one or more outliers. BSLs were calculated both with and without outliers, and final BSLs presented in the Table 2 series represent those without outliers.

2.2.2 Screening Criteria

Secondary to hypothesis testing and comparison of site data to BSLs, maximum medium-specific site concentrations from each exposure area were compared to conservative screening criteria recommended by the IEPA. These screening criteria consisted of the most conservative of the following criteria:

- Soil and Sediment – Tier 1 Soil Remediation Objectives from Part 742 Tiered Approach to Corrective Action Objectives (TACO) (IEPA 2007a), Non-TACO Soil Remediation Objectives (IEPA 2009b), Provisional Soil Remediation Objectives (IEPA 2004), and USEPA (2009a) Regional Screening Levels (RSLs) for Residential Soil

- Soil-to-Groundwater – TACO Tier 1 Soil Remediation Objectives for the Soil Component of the Groundwater Ingestion Exposure Route, Class I Groundwater (IEPA 2007a); Non-TACO Tier 1 Soil Remediation Objectives for the Soil Component of the Groundwater Ingestion Exposure Route, Class I Groundwater (IEPA 2009b); and Provisional Soil Remediation Objectives for the Soil Component of the Groundwater Ingestion Exposure Route, Class I Groundwater (IEPA 2004)

- Surface Water – USEPA Maximum Contaminant Levels (MCLs) (USEPA 2009b); IEPA Derived Water Quality Criteria (IEPA 2009a); TACO Groundwater Remediation Objectives, Class I Groundwater (IEPA 2007a); Non-TACO Groundwater Remediation Objectives, Class I Groundwater (IEPA 2009b); and Provisional Groundwater Remediation Objectives, Class I Groundwater (IEPA 2004)

- Fish Fillets – USEPA (2009a) RSLs for fish tissue

Appendix E presents the selection of the most conservative screening criteria for each exposure medium.

2.2.3 COPC Screening Process

The COPC screening process consisted of four general steps:

Step 1: Hypothesis testing and/or comparison of site data to BSLs. If the maximum on-site concentration exceeds its associated BSL, proceed to Step 2.

Step 2: Comparison of the maximum on-site concentration to the most conservative screening criterion (identified above in Section 2.2.2).

Step 3: Application of the Mixture Rule, which involves using target organ information as provided by IEPA (IEPA 2012) to adjust screening criteria. Constituents exceeding screening criteria were retained as preliminary COPCs.

Step 4: COPC refinement was used to identify COPCs to be carried through the quantitative evaluation in the HHRA. COPC refinement considered frequency of detection, degree of exceedance, occurrence of constituents in other site-related media, and site-relatedness.

Figures 2-9 through 2-12 present flowcharts that illustrate the COPC screening process in detail for all media. COPC screening was conducted separately for each exposure area identified for the HHRA; these areas include:

- Floodplain Area 1A – North shore of DePue Lake adjacent to the Village Park
- Floodplain Area 1B – North shore of DePue Lake near the Division Street outfall
- Floodplain Area 1C – North shore of DePue Lake near the South Ditch
- Floodplain Area 2 – Floodplain area surrounding DePue Lake to the west
- Floodplain Area 3 – Floodplain area surrounding DePue Lake to the east
- Sediment Area 1A – Area of DePue Lake adjacent to the Village Park
- Sediment Area 1B – Area of DePue Lake near the Division Street outfall
- Sediment Area 1C – Area of DePue Lake near the South Ditch
- Sediment Area 2 – Western portion of DePue Lake
- Sediment Area 3 – Eastern portion of DePue Lake
- Surface water, Eastern lake – Includes samples collected near the north shore of DePue Lake (samples SW-4, SW-5, SW-7, SW-8, and SW-9)

Appendix B presents the analytical data used in this HHRA. The soil and sediment exposure areas are represented on Figures 2-13, 2-14, and 2-15. Sample groupings that fall within these exposure areas are listed in Appendix B, Tables B-1, B-2, B-3, and B-4 for soil, sediment, surface water, and shoreline groundwater seeps, respectively.

Tables 2.1 through 2.27 present the COPC screening tables for site-related media for each of the exposure areas. Table 2.28 presents a summary of the COPCs for each medium. As requested by IEPA, constituents that exceeded the soil-to-groundwater screening criteria were retained as soil COPCs. PAHs were identified as COPCs in floodplain soil and DePue Lake sediment. PCBs (i.e., Aroclor 1254 and/or 1260) were identified as soil COPCs in Floodplain Areas 1B and 1C. Dieldrin and beta-hexachlorocyclohexane (beta-BHC) were the only pesticides identified as COPCs in floodplain soil, and were only retained as soil COPCs because they exceeded their associated soil-to-groundwater screening criteria. Various metals were identified as COPCs in soil, sediment, and surface water.

2.3 Exposure Point Concentrations

EPCs (e.g., 95 percent UCLs) were derived from recent site data (2006, 2007, and 2010) using the USEPA ProUCL Software (Version 4.00.04). This statistical software was used to calculate the UCL of the unknown population arithmetic mean (USEPA 2009a). The rationale for calculating the UCL term followed the procedures outlined in the ProUCL's User's Guide (USEPA 2009c). Each dataset was tested for normality using the Shapiro-Wilk W Test statistic with accompanying Quantile-Quantile (Q-Q) plots. Each dataset was also tested for the gamma distribution using the Anderson-Darling and Kolmogorov-Smirnov Empirical Distribution Functions test statistics with accompanying Q-Q plots.

Prior to calculation of EPCs, duplicate field samples were paired with their parent samples to develop a single representative concentration following USEPA (2002a) guidance. If both results were non-detect, then the maximum reporting limit was selected as the single representative result. If both results were detect, then the maximum detected concentration was selected if one or both concentrations were at least five times greater than the reporting limit (RL) or if the relative percent difference (RPD) between the samples was greater than 100 percent (non-aqueous samples) or 50 percent (aqueous samples). If the RPD was less than 100 percent (non-aqueous samples) or 50 percent (aqueous samples) then the arithmetic mean was selected as the single representative result. If the parent and duplicate samples were a mix of detect and non-detect values, then the maximum of the detected concentration and the non-detected RL was selected.

Based on the distribution of the dataset, a recommended UCL calculation procedure was followed. The UCL computation for data sets lacking non-detects followed the recommendations in the ProUCL (USEPA 2009c) User's Guide. For datasets with non-detect observations occurring at multiple detection limits, the Kaplan Meier (KM) estimate method was used. This method adjusts for censoring by calculating an estimate of standard error of the mean, which then can be used to calculate a UCL for various methods (e.g., normal approximations, percentile bootstrap, Chebyshev inequality) (USEPA 2009d).

The ProUCL-recommended UCLs were used as EPCs, and the same EPCs were used for both the Reasonable Maximum Exposure (RME) and Central Tendency Exposure (CTE) scenarios. Maximum detected concentrations were used as EPCs when there were fewer than five detections in the dataset or if the UCL exceeded the maximum concentration, with the exception of the whole-body fish tissue evaluation which used the median concentration as the EPC for the CTE scenario for COPCs with less than 5 detections (discussed in Section 6.9). For surface water, total metals concentrations were preferentially used to calculate EPCs if both total and filtered data were available.

Medium-specific EPCs are presented in Tables 3.1 through 3.27; these EPCs were calculated using all analytical data (i.e., include outlier concentrations).

2.4 Outlier Analysis

Outliers are measurements that are extremely large or small relative to the rest of the data and, therefore, are suspected of misrepresenting the population from which they were collected (USEPA 2006). An outlier may represent a true extreme value from a highly variable dataset, or it may represent an erroneous measurement. When data are grouped by location and compared across samples, consistent differences in the distribution of one or more constituents within a given location may indicate that the sample is representative of a different population. The identification of outliers is particularly important because summary statistics (e.g., UCLs) can be biased by the presence of one or more outliers. Appendix C presents the outlier analysis that was conducted in support of this HHRA.

Arsenic concentrations in several floodplain soil and DePue Lake sediment samples were identified as outliers (see Table C-1 in Appendix C). Likewise, benzo(a)pyrene, dibenz(a,h)anthracene, cadmium, and mercury concentrations in several DePue Lake sediment samples were identified as outliers (see Table C-1 in Appendix C). However, in some exposure areas, small sediment datasets (e.g., less than 8 samples) precluded the identification of statistical outliers for PAHs. Therefore, in these instances, the site-wide outlier analysis conducted for the RI was used as the basis for identifying potential outliers. (Table 4-6 in the RI Report details the site-wide outlier analysis.) No outliers were identified for groundwater seep sediment due to small sample sizes. For those constituents and scenarios for which outliers were identified, EPCs were calculated two ways: first using all data and then recalculated without outliers. Evaluating EPCs without outliers was used to help place potential risks and hazards into perspective. Risk and hazard estimates based on datasets that exclude outliers are discussed in Section 5, Risk Characterization.

2.5 Lead Modeling

Lead was identified as a COPC in the following media:

- Surface and subsurface floodplain soil, Floodplain Area 1B
- Surface floodplain soil, Floodplain Area 1C
- Surface floodplain soil, Floodplain Area 2
- Surficial and subsurface sediment, Sediment Area 1A
- Surficial and subsurface sediment, Sediment Area 1B
- Surficial sediments, lake-wide
- Groundwater seep sediment, Floodplain Area 1B
- Surface water, lake-wide
- Surface water, eastern portion of DePue Lake
- Groundwater seep surface water, Floodplain Area 1B
- Groundwater seep surface water, Floodplain Area 1C
- Fish fillets

There currently are no toxicity data for lead that allow a standard quantification of potential risks and hazards associated with lead exposure. Therefore, the USEPA (2009h) Adult Lead Model (ALM) and Integrated Exposure Uptake Biokinetic (IEUBK) model (USEPA 2007a) were used to quantify potential risks and hazards associated with lead exposure at the site. Specifically, the ALM was used to evaluate non-residential scenarios (i.e., exposure of receptors older than 7 years of age), and the IEUBK model was used to evaluate scenarios that involved exposure of young children under the age of 7 years. Parameter values used in the ALM and IEUBK are based on USEPA's recommended default values, and site-specific lead concentrations (i.e., soil, sediment, surface water, fish) were used to represent EPCs in the models. Consistent with USEPA (2003a, 2007a, 2009e) guidance, the EPCs used in the models represent the arithmetic mean of the exposure media. Appendix D presents the ALM and IEUBK models used to quantify potential lead risks.

The dose equations and modeling approaches are consistent with USEPA (2003a, 2007a, 2009e) guidance. Tables D-1, D-2, D-3, and D-4 in Appendix D present the parameter values used in the ALM for soil, sediment, surface water, and fish fillet tissue, respectively.

Parameters used in the IEUBK model are presented in Tables D-5 and D-6. Consistent with USEPA (2003a, 2007a, 2009e) guidance, these parameters represent CTEs and are the same CTE parameters used in the quantification of potential risks and hazards for all other COPCs.

In both the ALM and IEUBK, predicted blood lead levels (PbB) associated with exposure to site-related sources of lead are added to an assumed age-specific baseline PbB that reflects exposure to non-site-related sources of lead (e.g., diet). Several different exposure scenarios were evaluated using the ALM, including:

- Adult shoreline angler exposed to surficial sediment in Sediment Area 1A, eastern lake surface water, and lake-wide fish fillet tissue
- Adult boat angler exposed to lake-wide surficial sediment, lake-wide surface water, and lake-wide fish fillet tissue
- Adolescent trespasser exposed to surface soil in Floodplain Area 1B and groundwater seep sediment and surface water in Floodplain Area 1B
- Adolescent trespasser exposed to surface soil in Floodplain Area 1C and groundwater seep sediment and surface water in Floodplain Area 1C
- Adolescent trespasser exposed to surface soil in Floodplain Area 2
- Adult boater exposed to lake-wide surficial sediment and lake-wide surface water
- Adult utility maintenance worker exposed to surface and subsurface soil in Floodplain Area 1B, surficial and subsurface sediment in Sediment Area 1B, groundwater seep sediment and surface water in Floodplain Area 1B, and eastern lake surface water
- Adult Village Park maintenance worker exposed to surficial and subsurface sediment in Sediment Area 1A and eastern lake surface water
- Adult Village Park recreational user exposed to surficial sediment in Sediment Area 1A and eastern lake surface water

Scenarios evaluated with the IEUBK included:

- Child shoreline angler exposed to surficial sediment in Sediment Area 1A, eastern lake surface water, and lake-wide fish fillet tissue

- Child boat angler exposed to lake-wide surficial sediment, lake-wide surface water, and lake-wide fish fillet tissue

- Child boater exposed to lake-wide surficial sediment and lake-wide surface water[1]

- Child Village Park recreational user exposed to surficial sediment in Sediment Area 1A and eastern lake surface water[2]

In both the ALM and IEUBK models, potential health risks associated with lead exposure are evaluated by comparing the estimated PbB to the current USEPA target PbB of 10 micrograms per deciliter (µg/dL; Centers for Disease Control [CDC] 1991). The target PbB of concern is based on potentially adverse neurological effects in children (CDC 1991). Therefore, lead risk is evaluated based on the probability that PbB among a receptor population will exceed 10 µg/dL. This is sometimes referred to as the "P10 statistic." Consistent with USEPA guidance (USEPA 2003a), this lead evaluation focuses on determining if P10 equals or exceeds 5 percent, which is equivalent to calculating the 95th percentile of the probability distribution of PbB among a receptor population.

Both lead models employ a simplifying assumption to estimate the probability distribution of PbBs. Each model first generates a point estimate of the central tendency of the PbB distribution, and it is assumed that the value represents the geometric mean PbB among a receptor population that is exposed to the same levels of lead in the environment. Epidemiological data on PbBs among various populations suggest that the distribution is roughly lognormal in shape (USEPA 2003a). USEPA applies the assumption of lognormality to both models using the following equation:

$$PbB_{0.95} = PbB_{GM} \acute{} \ GSD^{1.645}$$

where:

[1] The IEUBK model for the child boat angler was used as a surrogate for the child boater because these two receptors are exposed to the same media, with the exception of fish tissue. Therefore, use of the child boat angler as a surrogate for the child boater is conservative.

[2] The IEUBK model for the child shoreline angler was used as a surrogate for the child Village Park recreational user because these two receptors are exposed to the same media, with the exception of fish tissue. Therefore, use of the child shoreline angler as a surrogate for the child Village Park recreational user is conservative.

$PbB_{0.95}$ = 95th percentile of the distribution of PbBs (µg/dL)

PbB_{GM} = geometric mean (or 50th percentile) of the lognormal distribution of PbBs (µg/dL)

GSD = geometric standard deviation of the lognormal distribution of PbBs (unitless)

2.5.1 Adult Lead Model

USEPA's ALM is used to evaluate risks to non-residential receptor populations (USEPA 2003a). The following equation is used in the ALM to estimate quasi-steady-state PbBs:

$$PbB_{GM} = PbB_0 + \frac{PbS \cdot BKSF \cdot IR \cdot AF \cdot EF}{AT}$$

where:

PbB_{GM} = geometric mean (or 50th percentile) of the lognormal distribution of PbBs in adult workers (µg/dL)

PbB_0 = baseline PbB due to exposure to non-site-related sources of lead (µg/dL)

PbS = lead concentration in environmental medium (milligrams per kilogram [mg/kg])

BKSF = biokinetic slope factor (µg/dL per µg/day)

IR = soil ingestion rate (g/day)

AF_{lead} = gastrointestinal absorption fraction for lead in soil (unitless)

EF = exposure frequency (days/year)

AT = averaging time (years)

The receptor of concern in the ALM is the fetus of a female adult worker. USEPA assumes a linear relationship between PbB in the woman and fetus. Therefore, the geometric mean PbB in the fetus is equal to PbB_{GM} multiplied by a constant, R. USEPA (2007a) guidance indicates that, because the IEUBK model is limited to 0 to 84 months, the ALM may also be used to assess older children and adolescents, with appropriate adjustments.

The following presents a brief overview of the parameter values used in the ALM:

Baseline Blood Lead Concentration (PbB_0)

The baseline PbB is intended to represent the best estimate of a reasonable central value of PbB in women of child-bearing age who are not exposed to lead-contaminated non-residential soil or dust at the site. USEPA (2009e) recommends a baseline concentration of 1.0 µg/dL based on national survey data for women from 1999 to 2004; this value was used in the ALM for all scenarios.

Geometric Standard Deviation (GSD)

USEPA (2009e) recommends a default GSD of 1.8 for use in the ALM; this value was used in the ALM for all scenarios.

Biokinetic Slope Factor (BKSF)

The BKSF represents the increase in typical adult PbB to average daily lead uptake. USEPA (2003a) recommends a default value of 0.4 µg Pb/dL blood per µg Pb absorbed/day for the BKSF parameter based on empirical data on the relationship between tap water lead concentrations and PbBs for a sample of adult males. This default value was used for all exposure pathways in the lead evaluation.

Soil Ingestion Rate (IR_{soil})

Consistent with USEPA (2010a) guidance, a soil ingestion rate of 50 milligrams per day (mg/day) was used to evaluate potential risks for the adolescent trespasser. This value represents the central tendency ingestion rate for soil non-contact-intensive activities (including soil-derived indoor dust) (USEPA 2010a). A soil ingestion rate of 100 mg/day was used to evaluate potential risks for the utility maintenance worker. This value represents the central tendency soil ingestion rate for contact-intensive adult scenarios (USEPA 2010a).

Sediment Ingestion Rate (IR_{sed})

A sediment ingestion rate of 50 mg/day was used to evaluate potential risks for the adult angler, adolescent trespasser, adult boater, utility maintenance worker, Village Park maintenance worker, and adult Village Park recreational user. This value represents the default value for soil ingestion (USEPA 2010a).

Fish Ingestion Rate (IR_{fish})

A fish ingestion rate of 8 grams per day was used to evaluate potential risks due to fish consumption for the adult shoreline angler and adult boat angler. This value represents the central tendency value for recreational freshwater anglers from USEPA's (1997a) *Exposure Factors Handbook*. However, it should be noted that the evaluation of fish consumption in the ALM may result in a slight overestimation of risk as a result of double-counting dietary lead because normal dietary exposure to lead in fish is already accounted for by the baseline PbB (USEPA 2010a).

Exposure Frequency (EF) and Averaging Time (AT)

Exposure frequencies used in this lead evaluation were consistent with those CTE values used in the quantification of potential risks and hazards for other COPCs identified in this HHRA. Consistent with USEPA (2003a) guidance, the averaging time was based on the exposure frequency to avoid dilution of exposures over the entire year.

Lead Absorption Fraction (AF_{lead})

An absorption fraction of 0.12 was used in the ALM for all scenarios except surface water, for which an absorption factor of 0.2 for soluble lead was used. The absorption fraction of 0.12 is the default value recommended by USEPA (2003a) based on experimental studies of the bioavailability of ingested lead in adult humans with considerations for the following three major sources of variability: 1) effect of food on lead bioavailability, 2) nonlinearity in PbB, and 3) effect of lead form and particle size on lead bioavailability. The value assumes the relative bioavailability (RBA) of lead in site-related media compared to soluble lead is 0.6, and the absorption fraction of soluble lead is 0.2 (AF_{lead} = 0.6 x 0.2 = 0.12).

Fetal/Maternal Blood Lead Concentration ($R_{fetal/maternal}$)

This lead evaluation used a fetal/maternal blood lead ratio of 0.9 for adult receptors, which is the default value recommended by USEPA (2003a) based on studies that have explored the relationship between umbilical cord and maternal PbBs. Because the adolescent trespasser is not assumed to be of child-bearing age, the fetal/maternal PbB ratio for this receptor was set equal to 1.

Results of the adult lead modeling are discussed in Section 5.4.

2.5.2 IEUBK Model

The IEUBK Model consists of four modules (exposure, uptake, biokinetics, and variability) that mathematically and statistically link environmental lead exposure to blood lead concentrations for a population of children, ages 0 to 84 months (USEPA 2007a). USEPA's IEUBK Model (Windows version 1.1, Build 11) was used to evaluate risks for child receptors. The application of the IEUBK Model assumes one child, one location, and homogeneous media concentrations. Similar to the ALM, the EPCs used in the IEUBK Model represent arithmetic means of the available data.

Tables D-5 and D-6 present the model parameters used to evaluate potential lead risks associated with sediment, surface water, and fish consumption exposures for children (i.e., shoreline angler, boat angler, boater, and Village Park recreational user). The IEUBK model for the child shoreline angler was used as a surrogate for the child Village Park recreational user because these receptors are expected to be exposed to the same media (i.e., lake sediment in Sediment Area 1A and eastern lake surface water), with the exception of fish consumption. Likewise, the IEUBK model for the child boat angler was used as a surrogate for the child boater because these receptors are expected to be exposed to the same media (i.e., lake-wide sediment and surface water, and groundwater seep sediment and surface water in Floodplain Area 1B), with the exception of fish consumption. Using these models as surrogates is a conservative measure. The majority of the parameter values used in the IEUBK Model represents model defaults (e.g., air and diet). The default dietary lead intakes used in this version of the IEUBK model are based on data collected by the U.S. Food and Drug Administration (USFDA 2006) and the CDC (1997). To evaluate potential exposures, the drinking water concentration was set at the default of 4 µg Pb/L. Surface water and fish consumption exposures were accounted for as alternate intakes. However, it should be noted that the inclusion of fish consumption as an alternate intake may result in a slight overestimation of risk as a result of double-counting dietary lead because normal dietary exposure to lead in fish is already accounted for by the baseline PbB (USEPA 2010a).

Results of the child lead modeling are discussed in Section 5.4.

2.5.3 Lead in Fish

Although lead was identified as a COPC in fish fillet tissue, only 2 of the 45 fish fillet samples exhibited lead concentrations above background (0.21 mg/kg). Of 15 fillet samples collected from Goose Lake, 2 samples (or 13.3 percent) exhibited detectable lead concentrations, ranging from 0.20 to 0.21 mg/kg. Of the 45 fillet samples collected from DePue Lake, 8 samples (or 17.8 percent) exhibited detectable lead concentrations, ranging from 0.13 to 0.22 mg/kg. Two of the DePue Lake samples (OU5-FI1-051 and

OU5-FI3-074) exhibited estimated (J-qualified) lead concentrations of 0.215 and 0.215 mg/kg, respectively, which is only slightly above background.

Lead concentrations in whole-body fish are discussed in Section 6.9.

3. Exposure Assessment

The exposure assessment identifies potential pathways of human exposure to site-related constituents and estimates the magnitude of that exposure.

3.1 Exposure Pathways

The exposure pathways quantitatively evaluated in this HHRA are discussed below for each medium; Table 1 presents a summary of these pathways.

3.1.1 Floodplain Surface Soil

Floodplain surface soil (0 – 0.5 ft bgs) represents a potentially complete exposure pathway for adolescent trespassers (ages 7 to 18 years), Village Park recreational users (adults and children), shoreline anglers (adults and children), Village Park maintenance workers, utility maintenance workers, wildlife workers and hunters, and farmers. Based on the activity patterns of these receptors, they may be exposed to surface soils in different floodplain areas.

Potential exposure routes that were quantitatively evaluated for these receptors as part of this HHRA are incidental ingestion and dermal contact. Consistent with the Work Plan (ARCADIS BBL 2006), inhalation exposure was not quantified for these receptors. This pathway is likely insignificant given the wet conditions of the soil/sediment and the dense vegetation that reduce the potential for dust generation, and the fact that metals (the primary COPCs) are resistant to volatilization. However, farmers may be exposed to COPCs in surface soil via incidental ingestion, dermal contact, and inhalation because tilling constitutes an intrusive activity that could generate dust and lead to inhalation of particulates.

Current/future scenarios quantitatively evaluated in this HHRA include:

- Exposure of adolescent trespassers to floodplain surface soils in Floodplain Areas 1B, 1C, 2, and 3 via incidental ingestion and dermal contact

- Exposure of Village Park recreational users (adults and children) to floodplain surface soils in Floodplain Area 1A via incidental ingestion and dermal contact. (This pathway will be addressed as part of OU4 because this area is technically outside of the 450 ft amsl OU5 boundary. The remedy for OU4 will be conservatively based on a residential scenario.)

- Exposure of shoreline anglers (adults and children) to floodplain surface soils in Floodplain Area 1A via incidental ingestion and dermal contact. (This pathway will be addressed as part of OU4 because this area is technically outside of the 450 ft amsl OU5 boundary. The remedy for OU4 will be conservatively based on a residential scenario.)

- Exposure of Village Park maintenance workers to floodplain surface soils in Floodplain Area 1A via incidental ingestion and dermal contact. (This pathway will be addressed as part of OU4 because this area is technically outside of the 450 ft amsl OU5 boundary. The remedy for OU4 will be conservatively based on a residential scenario.)

- Exposure of utility maintenance workers to floodplain surface soils in Floodplain Areas 1A, 1B, and WWTP Transect LL-5 via incidental ingestion and dermal contact (Floodplain Area 1A will be addressed as part of OU4 because this area is technically outside of the 450 ft amsl OU5 boundary. The remedy for OU4 will be conservatively based on a residential scenario.)

- Exposure of wildlife workers and hunters to floodplain surface soils in Floodplain Area 2 via incidental ingestion and dermal contact

- Exposure of farmers to floodplain surface soils in the agricultural area of the southern portion of the site (i.e., Floodplain Area 2/3) via incidental ingestion, dermal contact, and inhalation of particulates

3.1.2 Floodplain Subsurface Soil

Floodplain subsurface soil (0.5 – 2 ft bgs) represents a potentially complete exposure pathway for utility maintenance workers, wildlife workers and hunters, and farmers. Based on the activity patterns of these receptors, they may be exposed to subsurface soils in different floodplain areas.

Potential exposure routes that were quantitatively evaluated for these receptors as part of this HHRA are incidental ingestion and dermal contact. Consistent with the Work Plan (ARCADIS BBL 2006), inhalation exposure was not quantified for these receptors because this pathway is likely insignificant given the wet conditions of the soil/sediment and the dense vegetation that reduce the potential for dust generation and the fact that metals (the primary COPCs) are resistant to volatilization. However, farmers may be exposed to COPCs in subsurface soil via incidental ingestion, dermal contact, and inhalation because tilling constitutes an intrusive activity that could generate dust and lead to inhalation of particulates.

Current/future scenarios that were quantitatively evaluated in this HHRA include:

- Exposure of utility maintenance workers to floodplain subsurface soils in Floodplain Areas 1A, 1B, and WWTP Transect LL-5 via incidental ingestion and dermal contact (Floodplain Area 1A will be addressed as part of OU4 because this area is technically outside of the 450 ft amsl OU5 boundary. The remedy for OU4 will be conservatively based on a residential scenario.)

- Exposure of wildlife workers and hunters to floodplain subsurface soils in Floodplain Area 2 via incidental ingestion and dermal contact

- Exposure of farmers to floodplain subsurface soils in the agricultural area of the southern portion of the site (i.e., Floodplain Area 2/3) via incidental ingestion, dermal contact, and inhalation of particulates

3.1.3 DePue Lake Sediment

DePue Lake sediment represents a potentially complete exposure pathway for Village Park recreational users (adults and children), boaters (adults and children), boat anglers (adults and children), shoreline anglers (adults and children), Village Park maintenance workers, utility maintenance workers, lake-wide recreational users (adults and children), and wildlife workers and hunters. Based on different activity patterns, receptors are expected to be exposed to different areas of the site. Likewise, receptors may be exposed to different sediment depths based on activity. For purposes of this HHRA, surficial sediment is defined as 0 – 0.5 ft bss, and subsurface sediment is defined as 0.5 – 2 ft bss. Only receptors involved in intrusive activities (i.e., Village Park maintenance workers, utility maintenance workers, and wildlife workers and hunters) are expected to be exposed to subsurface sediments. Potential exposure routes quantitatively evaluated for sediment in this HHRA for these receptors are incidental ingestion and dermal contact.

Current/future scenarios that were quantitatively evaluated in this HHRA include:

- Exposure of Village Park recreational users (adults and children) to surficial sediments in Sediment Area 1A via incidental ingestion and dermal contact under a wading scenario

- Exposure of Village Park recreational users (adults and children) to surficial sediments in Sediment Area 1A via incidental ingestion and dermal contact under a swimming scenario

- Exposure of lake-wide recreational users (adults and children) to lake-wide, surficial sediments via incidental ingestion and dermal contact under a swimming scenario

- Exposure of boaters (adults and children) to lake-wide surficial sediments via incidental ingestion and dermal contact under a wading scenario

- Exposure of boat anglers (adults and children) to lake-wide surficial sediments via incidental ingestion and dermal contact under a wading scenario

- Exposure of shoreline anglers (adults and children) to surficial sediments in Sediment Area 1A via incidental ingestion and dermal contact under a wading scenario

- Exposure of Village Park maintenance workers to surficial and subsurface sediments in Sediment Area 1A via incidental ingestion and dermal contact under a wading scenario

- Exposure of utility maintenance workers to surficial and subsurface sediments in Sediment Area 1B via incidental ingestion and dermal contact under a wading scenario

- Exposure of wildlife workers and hunters to surficial and subsurface sediments in Sediment Area 2 via incidental ingestion and dermal contact under a wading scenario

Although annual boat races take place on DePue Lake, these boat races are not expected to cause resuspension of lake sediments based on earlier core data published by Cahill et al. in ISGS and ISWS publications and RI core data. Historically, the annual boat races have been staged over a three-day period in an oval race course located adjacent to the Village Park. The race boats are small hydroplane-type watercrafts that skim the water surface propelled by shallow propellers. In addition, a small number of boats propelled by ordinary outboard motors or outdrives are used to manage the races.

Analytical data collected as part of the RI show no evidence that sediments have been disturbed to depths beyond the surficial layers. If significant mixing was occurring, concentrations of chemicals would be expected to be relatively uniform, with no concentration gradient between surface and deeper sediments. However, sediment cores within the boat race area typically have surficial (0 – 0.5 and 0.5 – 1 foot) sediments that have lower concentrations of metals than deeper sediments. Any disturbance to surficial sediment layers by boat traffic would be expected to resettle following the disturbance without mixing with deeper sediment layers. Based on this information, the evaluation of surficial (0 -0.5 feet bss) and subsurface (0.5 – 2 feet bss) sediments is considered to adequately reflect potential exposures of human receptors.

3.1.4 DePue Lake Surface Water

DePue Lake surface water represents a potentially complete exposure pathway for Village Park recreational users (adults and children), boaters (adults and children), boat anglers (adults and children), shoreline anglers (adults and children), Village Park maintenance workers, utility maintenance workers, lake-wide recreational users (adults and children), and wildlife workers and hunters. Based on different activity patterns, receptors are expected to be exposed to different areas of the site. Two surface water exposure areas are considered, including lake-wide (which includes all lake surface water samples) and the eastern portion of the lake (which includes surface water samples SW-4, SW-5, SW-7, SW-8, and SW-9; see Figure 2-4). Potential exposure routes quantitatively evaluated in this HHRA for these receptors are incidental ingestion and dermal contact representative of a wading and/or swimming scenario.

Current/future scenarios quantitatively evaluated in this HHRA include:

- Exposure of Village Park recreational users (adults and children) to surface water in the eastern portion of the lake via incidental ingestion and dermal contact under a wading scenario

- Exposure of Village Park recreational users (adults and children) to surface water in the eastern portion of the lake via incidental ingestion and dermal contact under a swimming scenario

- Exposure of lake-wide recreational users (adults and children) to lake-wide surface water via incidental ingestion and dermal contact under a swimming scenario

- Exposure of boaters (adults and children) to lake-wide surface water via incidental ingestion and dermal contact under a wading scenario

- Exposure of boat anglers (adults and children) to lake-wide surface water via incidental ingestion and dermal contact under a wading scenario

- Exposure of shoreline anglers (adults and children) to surface water in the eastern portion of the lake via incidental ingestion and dermal contact under a wading scenario

- Exposure of Village Park maintenance workers to surface water in the eastern portion of the lake via incidental ingestion and dermal contact under a wading scenario

- Exposure of utility maintenance workers to surface water in the eastern portion of the lake via incidental ingestion and dermal contact under a wading scenario

- Exposure of wildlife workers and hunters to lake-wide surface water via incidental ingestion and dermal contact under a wading scenario

3.1.5 Groundwater Seep Sediment

Groundwater seeps located along the north shore of DePue Lake contain sediment that represents a potentially complete exposure pathway for adolescent trespassers, Village Park recreational users (adults and children), boaters (adults and children), boat anglers (adults and children), shoreline anglers (adults and children), Village Park maintenance workers, and utility maintenance workers. Potential exposure routes quantitatively evaluated in this HHRA for these receptors are incidental ingestion and dermal contact representative of a wading scenario.

Current/future scenarios quantitatively evaluated in this HHRA are:

- Exposure of adolescent trespassers to seep sediments in Floodplain Areas 1B and 1C via incidental ingestion and dermal contact under a wading scenario

- Exposure of Village Park recreational users (adults and children) to seep sediments in Floodplain Area 1A via incidental ingestion and dermal contact under a wading scenario

- Exposure of boaters (adults and children) to seep sediments in Floodplain Area 1A via incidental ingestion and dermal contact under a wading scenario

- Exposure of boat anglers (adults and children) to seep sediments in Floodplain Area 1A via incidental ingestion and dermal contact under a wading scenario

- Exposure of shoreline anglers (adults and children) to seep sediments in Floodplain Area 1A via incidental ingestion and dermal contact under a wading scenario

- Exposure of Village Park maintenance workers to seep sediments in Floodplain Area 1A via incidental ingestion and dermal contact under a wading scenario

- Exposure of utility maintenance workers to seep sediments in Floodplain Area 1B via incidental ingestion and dermal contact under a wading scenario

3.1.6 Groundwater Seep Surface Water

Groundwater seeps located along the north shore of DePue Lake contain surface water expressions that represent a potentially complete exposure pathway for adolescent trespassers, Village Park recreational users (adults and children), boaters (adults and

children), boat anglers (adults and children), shoreline anglers (adults and children), Village Park maintenance workers, and utility maintenance workers. Potential exposure routes quantitatively evaluated in this HHRA for these receptors are incidental ingestion and dermal contact representative of a wading scenario.

Current/future scenarios quantitatively evaluated in this HHRA are:

- Exposure of adolescent trespassers to seep surface water in Floodplain Areas 1B and 1C via incidental ingestion and dermal contact under a wading scenario

- Exposure of Village Park recreational users (adults and children) to seep surface water in Floodplain Area 1A via incidental ingestion and dermal contact under a wading scenario

- Exposure of boaters (adults and children) to seep surface water in Floodplain Area 1A via incidental ingestion and dermal contact under a wading scenario

- Exposure of boat anglers (adults and children) to seep surface water in Floodplain Area 1A via incidental ingestion and dermal contact under a wading scenario

- Exposure of shoreline anglers (adults and children) to seep surface water in Floodplain Area 1A via incidental ingestion and dermal contact under a wading scenario

- Exposure of Village Park maintenance workers to seep surface water in Floodplain Area 1A via incidental ingestion and dermal contact under a wading scenario

- Exposure of utility maintenance workers to seep surface water in Floodplain Area 1B via incidental ingestion and dermal contact under a wading scenario

3.1.7 Fish Fillet Tissue

Fish consumption represents a potentially complete site-wide exposure pathway for boat anglers (adults and children) and shoreline anglers (adults and children). Consumption of fish fillets by these recreational anglers is evaluated in this HHRA. Potential consumption of whole-body fish is evaluated as part of the uncertainty analysis in Section 6.9.

3.2 Exposure Factors

This HHRA used exposure factors that reflect site-specific conditions consistent with current scientific and regulatory policy. While some exposure factors are USEPA default values, others are site-specific values that more accurately reflect exposures at the site. Both RME

and CTE scenarios were evaluated in this HHRA. The RME scenario is intended to represent the "highest exposure that is reasonably expected to occur at a site" (USEPA 1989), and the CTE scenario is intended to represent more typical exposures. The exposure factors used for the HHRA are presented in Tables 4.1 through 4.4, and are briefly discussed below for each medium (i.e., floodplain soil, sediment, surface water, and fish).

3.2.1 Reasonable Maximum Exposure

3.2.1.1 Soil

The RME scenario used USEPA (2002b) default values for soil ingestion (100 mg/day) for the adolescent trespasser, farmers, and wildlife workers and hunters. Although conservative, a soil ingestion rate of 330 mg/day was used for the utility maintenance worker at the request of IEPA; this value represents the USEPA (2002b) default for a construction worker.

The exposure frequencies (EFs) used to quantitatively evaluate potential floodplain soil exposures for these receptors are based on professional judgment and site-specific information. Given that the exposure of trespassers and farmers is seasonal, an EF of 56 days per year was used in the HHRA. This value assumes 2 days per week for 7 months (April through October), or 8 full weeks of work (for the farmer). Given the climate in Illinois, an EF of 56 days per year is considered to be conservative because these receptors would not be expected to have exposure to floodplain soils during colder months, especially if there is snow cover. An EF of 75 days per year was used for the wildlife worker and hunter; this value represents an upper-bound estimate recommended by IEPA based on site-specific knowledge from the IDNR. Because there are a limited number of utilities in the area, an EF of 10 days per year was used for the utility maintenance worker.

Standard default exposure durations (EDs) were used to quantify potential risks and hazards for receptors exposed to floodplain soils. Specifically, an ED of 12 years was used for the adolescent trespasser, which represents ages 7 to 18 years. An ED of 25 years was used for the farmer, wildlife worker and hunter, and utility maintenance worker; this value is the default USEPA (2002b) value for occupational scenarios.

To evaluate dermal contact with floodplain soils, USEPA (2002b, 2004) default values for skin surface area (SA) were used. Specifically, for the farmer, wildlife worker, and utility maintenance worker, an SA of 3,300 square centimeters (cm^2) was used, which assumes hands, arms, and head. The USEPA (2002b, 2004) default exposure factor for skin surface area for adults, based on residential exposures to soil, is 5,700 cm^2, which represents head, forearms, hands, and lower legs; this value was used for the adolescent trespasser.

The USEPA (2002b, 2004) default exposure factors for dermal adherence factor (AF) were used to evaluate potential soil exposures for adolescent trespassers, farmers, wildlife workers and hunters, and utility maintenance workers. The AF for adolescent trespassers (0.07 milligram per square centimeter [mg/cm^2]) is based on the 50th percentile for residential gardeners (USEPA 2004). The AF for the farmer (0.4 mg/cm^2) represents the 95th percentile for farmers, the AF for the worker (0.2 mg/cm^2) represents the 95th percentile for commercial landscapers (USEPA 2004), and the AF for utility maintenance workers (0.3 mg/cm^2) represents the 95th percentile for construction workers.

For inhalation of soil particulates by the farmer, the HHRA uses a particulate emission factor (PEF) of 1.24E+08 cubic meters per kilogram (m^3/kg). The PEF represents a default value for soils undergoing agitation from TACO (IEPA 2007a).

For those receptors exposed to both soils and sediments, the fraction ingested from site (FI) parameter was set to 0.5 to account for total daily exposure from both media.

Table 4.1 presents a summary of exposure factors for floodplain soil.

3.2.1.2 Sediment

USEPA makes no default recommendations about sediment ingestion rates, although guidance does suggest that soil values may be used to evaluate sediment exposures. Consistent with USEPA (1989) guidance, the RME scenario for sediment ingestion used the same USEPA (2002b) default values used for soil ingestion (100 mg/day) for the adolescent trespasser and wildlife worker and hunter. However, because the soil ingestion rate used for the utility maintenance worker (330 mg/day) is likely to be over-conservative and associated with uncertainties (discussed in Section 6.5.1), this value was not considered appropriate for evaluating sediment exposures. Specifically, the soil ingestion rate of 330 mg/day represents the 95th percentile from a study, which was affected by one individual who had an extremely high soil ingestion rate. Rather than use an extreme soil ingestion rate associated with uncertainties, a sediment ingestion rate of 100 mg/day was used for both the utility maintenance worker and the Village Park maintenance worker. The value of 100 mg/day is considered to be appropriate because sediment ingestion is expected to be lower than soil ingestion as a result of sediments washing off the hands due to overlying surface water (USEPA 2004). The soil ingestion rate of 100 mg/day is currently recommended by the Massachusetts Department of Environmental Protection (MADEP 2002) as an enhanced incidental soil ingestion rate, which is based on factors related to soil adherence. This ingestion rate is approximately equivalent to a worker ingesting 30% of soil (or sediment) from hands that have a total surface area of 990 cm^2 and a soil adherence factor of 0.3 mg/cm^2. USEPA (2011) states that soil ingestion rates can be compared to measures of soil adherence to hands because that is the amount available for ingestion

from hand-to-mouth activities. Therefore, a sediment ingestion rate of 100 mg/day is considered to be conservative for a worker scenario. For other receptors, including the Village Park recreational user, lake-wide recreational user, boater, boat angler, and shoreline angler, a sediment ingestion rate of 100 mg/day was used for the adult, and a sediment ingestion rate of 200 mg/day was used for the child.

The EF used to quantitatively evaluate potential sediment exposures for Village Park recreational users (adults and children), lake-wide recreational users (adults and children), adolescent trespassers, and Village Park maintenance workers was 56 days per year, which represents 2 days per week for 7 months (April through October). An EF of 26 days per year was used for boaters, which assumes 2 days per week for 13 weeks of summer. The EF used for boat and shoreline anglers (50 days/year) represents an upper-bound based on average exposure for Illinois anglers from USFWS (2008); this value was recommended by IEPA. The EFs used to evaluate sediment exposures for the wildlife worker and hunter (75 days/year) and utility maintenance worker (10 days/year) are the same values used to evaluate soil exposures.

Standard EDs were used for receptors exposed to sediment (i.e., 6 years for children, 24 years for recreational adults, 12 years for adolescent trespassers, and 25 years for workers).

To evaluate dermal contact with sediments under a wading scenario, the USEPA (2002b, 2004) default value for skin surface area (SA = 5,700 cm^2) was used for the Village Park recreational user (adult), boater (adult), boat angler (adult), shoreline angler (adult), and adolescent trespasser. This value represents the 50^{th} percentile for hands, forearms, lower legs, and feet (average of male and female adults). An SA of 2,440 cm^2 was used for the Village Park recreational user (child), boater (child), boat angler (child), and shoreline angler (child); this value represents the 50^{th} percentile for hands, forearms, lower legs, and feet (average of male and female children ages 3 to 6 years). The SA used for the wildlife worker and hunter, Village Park maintenance worker, and utility maintenance worker (SA = 2,300 cm^2) represents the 50^{th} percentile for adult male hands and forearms (USEPA 1997a).

To evaluate dermal contact with sediments under a swimming scenario, the USEPA (2004) default values for skin surface area (adult = 18,000 cm^2; child = 6,600 cm^2) were used for Village Park recreational users and lake-wide recreational users.

The USEPA (2002b, 2004) default exposure factors for dermal adherence (AF = 0.2 mg/cm^2) was used to evaluate potential sediment exposures for all receptors under both wading and swimming scenarios; this value represents the 50^{th} percentile for children

playing in wet soil and utility workers, and the 95th percentile for adult landscapers (USEPA 2004).

For those receptors exposed to both soils and sediments, the fraction ingested (FI) parameter (a/k/a the area use factor) was set to 0.5 to account for total daily exposure when the receptor was exposed to both floodplain soils and DePue Lake sediment. When a receptor was expected to be exposed to floodplain soil, DePue Lake sediment, and groundwater seep sediment, the FI factors were adjusted to reflect 100% of daily exposure. Specifically, an FI of 0.5 was used for floodplain soil, an FI of 0.3 was used for groundwater seep sediments, and an FI of 0.2 was used for DePue Lake sediments. For the lake-wide recreational user, an FI of 1 was used to evaluate sediment exposures because this receptor was not assumed to be exposed to floodplain soils and/or groundwater seep sediments.

Table 4.2 presents a summary of exposure factors for exposure to DePue Lake sediment and groundwater seep sediment under a wading scenario. Table 4.2A presents a summary of exposure factors for DePue Lake sediment under a swimming scenario.

3.2.1.3 Surface Water

The exposure parameters used to quantitatively evaluate potential surface water exposures for Village Park recreational users (adults and children), boaters (adults and children), boat anglers (adults and children), shoreline anglers (adults and children), adolescent trespassers, wildlife workers and hunters, Village Park maintenance workers, and utility maintenance workers exposed to DePue Lake surface water and/or groundwater seep surface water under a wading scenario were the same as those used to evaluate potential sediment exposures under a wading scenario. The incidental surface water ingestion rate (i.e., contact rate) is the TACO default rate (0.01 liter per hour) from Part 302, Water Quality Standards (IEPA 2007b). The RME event duration was assumed to be 1 hour per event with one event per day. Dermal permeability constants (Kp values) used to evaluate dermal surface water exposures were taken from USEPA's (2004) Risk Assessment Guidance For Superfund (RAGS) Part E.

The EF used to quantitatively evaluate potential sediment exposures under a wading scenario for Village Park recreational users (adults and children), adolescent trespassers, and Village Park maintenance workers was 56 days per year, which represents 2 days per week for 7 months (April through October). An EF of 26 days per year was used for boaters, which assumes 2 days per week for 13 weeks of summer. An EF of 50 days/year, which is the value recommended by IEPA based on its analysis of the USFWS (2008) data for Illinois anglers, was used to evaluate direct contact exposures for boat and shoreline anglers. The EFs used to evaluate sediment exposures for the wildlife worker and hunter

(75 days/year) and utility maintenance worker (10 days/year) are the same values that were used to evaluate sediment exposures. Standard EDs were used for receptors exposed to surface water (i.e., 6 years for children, 24 years for recreational adults, 12 years for adolescent trespassers, and 25 years for workers).

To evaluate dermal contact with surface water under a wading scenario, the USEPA (2002b, 2004) default value for skin surface area (SA = 5,700 cm^2) was used for the Village Park recreational user (adult), boater (adult), boat angler (adult), shoreline angler (adult), and adolescent trespasser. This value represents the 50^{th} percentile for hands, forearms, lower legs, and feet (average of male and female adults). An SA of 2,440 cm^2 was used for the Village Park recreational user (child), boater (child), boat angler (child), and shoreline angler (child); this value represents the 50^{th} percentile for hands, forearms, lower legs, and feet (average of male and female children ages 3 to 6 years). The SA used for the wildlife worker and hunter, Village Park maintenance worker, and utility maintenance worker (SA = 2,300 cm^2) represents the 50^{th} percentile for adult male hands and forearms (USEPA 1997a).

To evaluate dermal contact with surface water under a swimming scenario, the USEPA (2004) default values for skin surface area (adult = 18,000 cm^2; child = 6,600 cm^2) were used for the Village Park recreational user and lake-wide recreational user.

For those receptors exposed to both groundwater seep surface water and lake surface water under a wading scenario, the FI parameter was set to 0.5 for each medium to account for the combined total daily exposure. For the lake-wide recreational user, an FI of 1 was used to evaluate surface water exposures because this receptor was not assumed to be exposed to groundwater seep surface water.

Table 4.3 presents a summary of exposure factors for exposure to DePue Lake surface water and groundwater seep surface water under a wading scenario. Table 4.3A presents a summary of exposure factors for exposure to DePue Lake surface water under a swimming scenario.

3.2.1.4 Fish

Consumption of fish fillets was evaluated in this HHRA for recreational anglers (i.e., boat and shoreline anglers, adults and children). As requested by IEPA, an evaluation of whole-body fish consumption is conducted in this HHRA. This evaluation is presented in the uncertainty analysis because there are no available data for the site that indicate consumption of whole fish carcasses is occurring. Specifically, potential risks and hazards associated with consumption of edible-sized fish fillets from DePue Lake were evaluated. It was assumed that all fish species were consumed at an equal rate, and therefore the EPC

for fish tissue includes all available fillet data. The adult fish ingestion rate of 25 grams per day reflects the 95th percentile value for freshwater recreational anglers from USEPA's (1997a) Exposure Factors Handbook (EFH); this value was used in the HHRA at the request of the IEPA. Specifically, this value was derived by averaging the values from three populations surveyed in the key studies presented in USEPA's (1997a) EFH. The RME child fish ingestion rate was assumed to be half of this value (12.5 grams per day). Consistent with USEPA (1989) guidance, default residential values were used for the EFs and EDs (EF = 365 days/year; adult ED = 24 years; child ED = 6 years).

3.2.1.5 Fraction Ingested from the Site

The FI factor accounts for the percentage of potential exposures attributable to site media. Generally, an FI of 1 was used for those receptors that were not assumed to be exposed to multiple media across the site. Specifically, for receptors exposed to soil, lake sediment, and seep sediment, the total FI equals 1 (100%). Seep sediments are located along the lake shoreline or in shallower water than most of the surface sediments such that exposure to seep sediments is likely to be slightly greater than to lake sediments. Therefore, in an effort to apportion total daily exposures for receptors exposed to soil, lake sediment, and seep sediment, an FI of 0.5 was used for soil and FIs of 0.2 and 0.3 were used for lake sediment and seep sediment, respectively. Likewise, for receptors exposed to soil and lake sediment or seep sediment, exposures were apportioned across these media by using an FI of 0.5 for each exposure medium.

3.2.2 Central Tendency Exposure

3.2.2.1 Soil

The CTE scenario used a soil ingestion rate of 50 mg/day for the adolescent trespasser and farmer. This value represents the mean recommended value for soil ingestion from USEPA's (1997a) EFH. A soil ingestion rate of 100 mg/day was used for the wildlife worker and hunter and utility maintenance worker; this value represents the USEPA (2002b) default for an outdoor worker.

Given that the exposure of trespassers and farmers is seasonal, an EF of 28 days per year was used in the HHRA. This value assumes 1 day per week for 7 months (April through October) or 4 full weeks of work (i.e., for the farmer), and represents one-half of the RME EF. An EF of 53 days per year was used for the wildlife worker and hunter; this value represents an average based on site-specific knowledge from the IDNR. Because there are a limited number of utilities in the area, an EF of 5 days per year was used for the utility maintenance worker; this value represents one-half of the RME EF.

An ED of 9 years was used for the adolescent trespasser, farmer, wildlife worker and hunter, and utility maintenance worker; this value is from USEPA (1989), and represents the 50th percentile for time spent at one residence and is typically used to represent adult exposure durations for CTE residential and occupational scenarios.

To evaluate dermal contact with floodplain soils, USEPA (2002b, 2004) default values for skin SA were used. Specifically for the farmer, wildlife worker, and utility maintenance worker, an SA of 3,300 cm^2 was used, which assumes hands, arms, and head. The USEPA (2002b, 2004) default exposure factor for skin surface area for adults, based on residential exposures to soil, is 5,700 cm^2, which represents head, forearms, hands, and lower legs; this value was used for the adolescent trespasser.

The AFs used to evaluate potential soil exposures for adolescent trespassers, farmers, wildlife workers and hunters, and utility maintenance workers were 0.04 mg/cm^2, 0.1 mg/cm^2, 0.1 mg/cm^2, and 0.1 mg/cm^2, respectively. The AF for adolescent trespassers is based on the 50th percentile for teenage soccer players (USEPA 2004). The AF for the farmer, wildlife worker and hunter, and utility maintenance worker (0.1 mg/cm^2) represents the 50th percentile for gardeners and construction workers (USEPA 2004).

For inhalation of soil particulates by the farmer, the HHRA uses a PEF of 1.24E+08 m^3/kg. The PEF represents a default value from TACO (IEPA 2007a).

For those receptors exposed to both soils and sediments, the FI parameter was set to 0.5 to account for total daily exposure.

Table 4.1 presents a summary of exposure factors for floodplain soil.

3.2.2.2 Sediment

The sediment ingestion rate for adult receptors including the Village Park recreational user, lake-wide recreational user, boater, boat angler, shoreline angler, wildlife worker and hunter, Village Park maintenance worker, and utility maintenance worker was 50 mg/day; this value represents the mean recommended value for soil ingestion from USEPA's (1997a) EFH and the default soil ingestion rate from USEPA's (1991a) Standard Default Exposure Factors. Specifically, the USEPA's EFH (1997a and 2009 Update) recommends a central tendency value of 50 mg/day for soil ingestion for an adult. Likewise, the USEPA Adult Lead Model recommends a value of 50 mg/day as a reasonable central tendency estimate of adult soil ingestion. Additionally, USEPA (1991a) recommends a value of 50 mg/day for soil ingestion by adults in an occupational setting. As mentioned previously, sediments would be expected to wash off hands due to overlying surface water. Therefore, a sediment ingestion rate of 50 mg/day is considered to be conservative for a worker

scenario. A sediment ingestion rate of 100 mg/day was used for the child receptors including Village Park recreational user, lake-wide recreational user, boater, boat angler, and shoreline angler; this value represents one-half of the RME value.

The EF used to quantitatively evaluate potential sediment exposures for Village Park recreational users (adults and children), lake-wide recreational users (adults and children), adolescent trespassers, and Village Park maintenance workers was 28 days per year, which represents 1 day per week for 7 months (April through October). An EF of 13 days per year was used for boaters, which assumes 1 day per week for 13 weeks of summer. The EF used for boat and shoreline anglers (20 days/year) represents an average exposure for Illinois anglers from USFWS (2008). The EFs used to evaluate sediment exposures for the wildlife worker and hunter and utility maintenance worker (53 and 5 days/year, respectively) are the same values used to evaluate soil exposures.

Standard EDs were used for receptors exposed to sediment (i.e., 6 years for children, 9 years for recreational adults, 9 years for adolescent trespassers, and 9 years for workers).

To evaluate dermal contact with sediments under a wading scenario, the USEPA (2002b, 2004) default value for skin surface area (SA = 5,700 cm^2) was used for the Village Park recreational user (adult), boater (adult), boat angler (adult), shoreline angler (adult), and adolescent trespasser. This value represents the 50^{th} percentile for hands, forearms, lower legs, and feet (average of male and female adults). An SA of 2,440 cm^2 was used for the Village Park recreational user (child), boater (child), boat angler (child), and shoreline angler (child); this value represents the 50^{th} percentile for hands, forearms, lower legs, and feet (average of male and female children ages 3 to 6 years). The SA used for the wildlife worker and hunter, Village Park maintenance worker, and utility maintenance worker (SA = 2,300 cm^2) represents the 50^{th} percentile for adult male hands and forearms (USEPA 1997a).

To evaluate dermal contact with sediments under a swimming scenario, the USEPA (2004) default values for skin surface area (adult = 18,000 cm^2; child = 6,600 cm^2) were used for Village Park recreational users and lake-wide recreational users.

The USEPA (2002b, 2004) default exposure factor for dermal adherence (AF = 0.04 mg/cm^2) was used to evaluate potential sediment exposures under wading and/or swimming scenarios for Village Park recreational users (adults and children), lake-wide recreational users (adults and children), boaters (adults and children), boat anglers (adults and children), shoreline anglers (adults and children), and adolescent trespassers. This value is based on the 50^{th} percentile for teenage soccer players in moist conditions (USEPA 2004).

For those receptors exposed to both soils and sediments under a wading scenario, the FI parameter was set to 0.5 to account for total daily exposure when the receptor was exposed to both floodplain soils and DePue Lake sediment. When a receptor was expected to be exposed to floodplain soil, DePue Lake sediment, and groundwater seep sediment, the FI factors were adjusted to reflect 100% of daily exposure. Specifically, an FI of 0.5 was used for floodplain soil, an FI of 0.3 was used for groundwater seep sediments, and an FI of 0.2 was used for DePue Lake sediments. For the lake-wide recreational user, an FI of 1 was used to evaluate sediment exposures because this receptor was not assumed to be exposed to floodplain soils and/or groundwater seep sediments.

Table 4.2 presents a summary of exposure factors for exposure to DePue Lake sediment and groundwater seep sediment under a wading scenario. Table 4.2A presents a summary of exposure factors for exposure to DePue Lake sediment under a swimming scenario.

3.2.2.3 Surface Water

The exposure parameters used to quantitatively evaluate potential surface water exposures for Village Park recreational users (adults and children), lake-wide recreational users (adults and children), boaters (adults and children), boat anglers (adults and children), shoreline anglers (adults and children), adolescent trespassers, wildlife workers and hunters, Village Park maintenance workers, and utility maintenance workers exposed to DePue Lake surface water and/or groundwater seep surface water were the same as those used to evaluate potential sediment exposures. The incidental surface water ingestion rate (i.e., contact rate) is the TACO default rate (0.01 liter per hour) from Part 302, Water Quality Standards (IEPA 2007b). The CTE event duration was assumed to be 1 hour per event with one event per day. Dermal permeability constants (Kp values) used to evaluate dermal surface water exposures were taken from USEPA (2004) RAGS Part E.

For those receptors exposed to surface water from DePue Lake and groundwater seeps, the FI parameter was set to 0.5 to account for total daily exposure. For those receptors only exposed to DePue Lake surface water, an FI of 1 was used.

Table 4.3 presents a summary of exposure factors for DePue Lake surface water and groundwater seep surface water under a wading scenario. Table 4.3A presents a summary of exposure factors for DePue Lake surface water under a swimming scenario.

3.2.2.4 Fish

The adult fish ingestion rate of 8 grams per day reflects the 50th percentile value for freshwater recreational anglers from USEPA's (1997a) EFH; this value was used in the HHRA at the request of the IEPA. Specifically, this value was derived by averaging the

values from three populations surveyed in the key studies presented in USEPA's (1997a) EFH. The CTE child fish ingestion rate was assumed to be half of this value (4 grams per day). Consistent with USEPA (1989) guidance, default residential values were used for the EF and EDs (EF = 365 days/year; adult ED = 9 years; child ED = 6 years).

3.2.2.5 Fraction Ingested from the Site

It was generally assumed that site media (i.e., soil, sediment, surface water, and fish) account for 50 percent of potential exposures (FI = 0.5). This assumes that only half of the receptors' exposures are attributable to the site. For receptors exposed to multiple media, the FI factors were weighted to apportion such exposures. Seep sediments are located along the lake shoreline or in shallower water than most of the surface sediments such that exposure to seep sediments is likely to be slightly greater than to lake sediments. Therefore, in an effort to apportion total daily exposures for receptors exposed to soil, lake sediment, and seep sediment, an FI of 0.5 was used for soil and FIs of 0.2 and 0.3 were used for lake sediment and seep sediment, respectively. Likewise, for receptors exposed to soil and lake sediment or seep sediment, exposures were apportioned across these media by using an FI of 0.5 for each exposure medium.

3.3 Chemical-Specific Factors

Table 4.5 presents the chemical-specific factors that were used in the HHRA, including relative bioavailability factors (RBFs), dermal absorption fractions (ABS) for dermal exposures associated with soil and sediment, and dermal permeability coefficients (Kp) associated with dermal surface water exposures.

3.3.1 Relative Bioavailability Factors

RBFs account for the amount of a chemical that is absorbed into the body following direct contact exposure (i.e., ingestion). This concept is especially important for metals which can occur in a wide variety of chemical and physical forms, all of which are not readily absorbed when ingested (USEPA 2009f). A conservative default of 1 (i.e., 100 percent bioavailability) was used for all COPCs with the exception of arsenic. Based on USEPA's (2012a) *Recommendations for Default Value for Relative Bioavailability of Arsenic in Soil*, recent bioavailability studies conducted in animal models show that bioavailability of arsenic in soil is typically less than that of highly water soluble forms of arsenic, specifically those forms used to develop current toxicity values. USEPA (2012a) states that an assumption of an RBF of 100% for arsenic in soil will result in an overestimation of risk. The Technical Review Workgroup (TRW) Bioavailability Committee compiled all available estimates of soil arsenic RBFs (n = 103), which included swine, monkey, and mouse bioassays. Analyses of these data showed that although soil RBFs were variable, all estimates were less than 1 and that

values exceeding 60 percent were relatively uncommon (USEPA 2012a). Therefore, a default RBF of 60 percent was selected because it represents an upper percentile of the available dataset.

IEPA verbally approved the use of a "default" bioavailability factor of 60 percent for arsenic in soil during the May 2013 meeting with the DePue Group. The use of a 60% RBF for arsenic in soil reflects current USEPA (2012b) policy.

3.3.2 Dermal Absorption Fractions

ABS values were taken from USEPA (2004) RAGS, Part E, Supplemental Guidance for Dermal Risk Assessment. These values reflect the amount of a chemical that is absorbed through the skin following dermal exposure. Consistent with USEPA (2004) guidance in RAGS Part E, the dermal exposure route for soil and/or sediment was not quantitatively evaluated if a metal COPC lacked an ABS value because the speciation of the compound is critical to the dermal absorption and there are too little data to extrapolate a reasonable default value for inorganics. However, a default ABS is recommended for SVOCs (ABS = 10%), and this value was used to quantitatively evaluate dermal exposures for this group of chemicals in the HHRA.

3.3.3 Dermal Permeability Coefficients

Kp values were taken from USEPA (2004) RAGS Part E, and reflect the amount of dermal absorption for the surface water exposure pathway. Kp values are based on the oil/water partition coefficient and molecular weight of a chemical.

3.4 Intakes

Intakes (i.e., average daily doses) for the ingestion, dermal contact, and inhalation exposure pathways are expressed in milligrams per kilogram of body weight per day (mg/kg-day) and were calculated using the EPC and applying the exposure factors that are presented in Tables 4.1 through 4.4. Equations used in this HHRA to calculate intakes and associated cancer risks and non-cancer hazards are also presented in Tables 4.1 through 4.4.

4. Toxicity Assessment

4.1 Toxicity Values

The toxicity assessment identifies the potential effects that are associated with exposure to a given chemical. The USEPA's guidance evaluates two types of toxic effects: carcinogenic effects and non-carcinogenic effects. To quantify non-carcinogenic effects, the USEPA has derived oral reference doses (RfDs) in units of mg/kg-day that represent a threshold of toxicity. RfDs are intended to represent "an estimate (with uncertainty spanning perhaps an order of magnitude) of a daily exposure to the human population (including sensitive subgroups) that is likely to be without an appreciable risk of deleterious effects during a lifetime" (USEPA 1989). Table 5.1 presents non-cancer toxicity data for the oral/dermal pathways, and Table 5.2 presents non-cancer toxicity data for the inhalation pathway.

To quantify carcinogenic effects, the USEPA has derived slope factors (SFs) for those chemicals found to cause a dose-related, statistically significant increase in tumor incidence in an exposed population relative to the incidence of tumors observed in an unexposed population. These dose-related incidence rates are usually determined in a laboratory study. SFs are typically developed based on oral toxicity studies and are reported as risk per dose in units of $(mg/kg\text{-}day)^{-1}$. The SFs are used to quantify the potential risk of cancer associated with a given exposure. The weight-of-evidence classifications for carcinogenic COPCs for the oral/dermal pathways are presented in Table 6.1. The weight-of-evidence classification for carcinogenic COPCs for the inhalation pathway is presented in Table 6.2.

The oral SFs and RfDs described above were used to evaluate both ingestion and dermal contact exposure routes. Because most oral toxicity values are based on an administered dose, these toxicity values were sometimes adjusted (expressed as an absorbed dose) when evaluating dermal exposure scenarios. The USEPA requires this adjustment only when the gastrointestinal absorption of a compound is less than 50 percent (USEPA 2004).

Inhalation SFs and RfDs used to evaluate inhalation exposures for the farmer were extrapolated from available unit risk factors (URFs) and reference concentrations (RfCs).

Toxicity data were selected based on the recommended hierarchy presented in USEPA's (2003b) Human Health Toxicity Values in Superfund Risk Assessments. The USEPA Integrated Risk Information System (IRIS) on-line database was used as the primary source for toxicity values. Other sources included Provisional Peer-Reviewed Toxicity Values (PPRTVs) from USEPA's Office of Solid Waste and Emergency Response (OSWER), Agency for Toxic Substances and Disease Registry (ATSDR) Minimal Risk Levels (MRLs), and toxicity values from the USEPA (1997b) Health Effects Assessment Summary Tables (HEAST).

Because lead does not have a toxicity value, potential risks associated with exposure to this COPC were evaluated using USEPA's ALM and IEUBK Models as discussed in Section 2.5.

4.2 Early-Life Adjustment

Carcinogenic PAHs, including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene, are identified as potential mutagenic compounds in USEPA's (2005) *Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens*. This guidance suggests that the estimation of potential risks for children exposed to mutagenic compounds in environmental media should consider the use of age dependent adjustment factors (ADAFs) (ADAF of 10 for ages 0 to <2; ADAF of 3 for ages 2 to <16; and ADAF of 1 for ages 16+). These default ADAFs in USEPA's (2005) guidance document were derived based on laboratory animal data for six chemicals with potential mutagenic modes of action and data from repeated dose or lifetime dose experiments. Specifically, the generic ADAF of 10 for neonatal exposures is derived from data on benzidine, vinyl chloride, safrole, 3-methyl cholanthrene, diethylnitrosamine, and urethane. Benzo(a)pyrene and the other six potentially carcinogenic PAHs are not among the chemicals that USEPA has relied on to derive default ADAFs. USEPA (2005) guidance recommends that these default values should not be used when chemical-specific data are available. Although data are available for benzo(a)pyrene (i.e., acute dosing studies), as recommended by IEPA, default ADAFs were used to quantify potential risks for carcinogenic PAHs in this HHRA.

Mutagenic calculations for carcinogenic PAHs are presented in Appendix F. Uncertainties associated with the use of default ADAFs is discussed in the Uncertainty Analysis (Section 6.8).

5. Risk Characterization

The risk characterization integrates the results of the data evaluation, toxicity assessment, and exposure assessment to evaluate potential risks associated with exposure to site-related constituents in site soils, sediments, surface water, groundwater seeps, and fish fillet tissue. Consistent with the USEPA (1989) guidance, the potential for carcinogenic risks and non-carcinogenic health hazards are evaluated separately.

Tables 7.1.RME through 7.18.CTE present the EPCs, intakes, toxicity values, and associated cancer risks and non-cancer hazards for each receptor. Tables 9.1.RME through 9.18A.CTE present a summary of the risks and hazards for each exposure route and also present target-organ-specific hazard quotients (HQs).

5.1 Non-Carcinogenic Health Hazards

The hazard index (HI) is used to characterize potential non-carcinogenic health hazards associated with exposure to multiple chemicals. This approach assumes that sub-threshold chronic exposures to multiple chemicals are additive. However, HQs should only be summed for constituents with the same target organ. The HI is calculated as follows:

$$HI = E1/RfD1 + E2/RfD2 + \ldots + Ei/RfDi$$

where:

HI = Hazard Index

E/RfD = HQ

Ei = Exposure intake for the i^{th} chemical (mg/kg-day)

RfDi = RfD for the i^{th} chemical

An HQ value greater than 1 indicates that a calculated exposure is greater than the RfD for a given constituent and that there may be some potential for health concerns. Similarly, an HI greater than 1 indicates that overall exposure to all chemicals of interest may present a concern (USEPA 1989). IEPA (2007a) suggests an acceptable HI of 1 in TACO, Section 742.900.

Non-cancer hazards for each receptor are presented separately below.

5.1.1 Adolescent Trespasser – Floodplain Area 1B

Adolescent trespassers were assumed to be exposed to floodplain surface soil and groundwater seep sediment and surface water in Floodplain Area 1B. Both RME and CTE non-cancer hazards for the adolescent trespasser were less than the USEPA target of 1 (RME HI = 0.8; CTE HI = 0.2). Arsenic and cadmium exhibited the highest HQs for surface soil and groundwater seep sediment. Cadmium and manganese exhibited the highest HQs in groundwater seep surface water. Tables 7.1.RME and 7.1.CTE present the hazards for the adolescent trespasser exposed to media in Floodplain Area 1B. Tables 9.1.RME and 9.1.CTE present a summary of hazards for all exposure routes and HQs for target organs.

Two arsenic concentrations in floodplain surface soil from Floodplain Area 1B were identified as outliers for this scenario (sample LL7-2-0-0.5 = 73 mg/kg and sample LL7-1-0-0.5 = 390 mg/kg; refer to Table C-1 in Appendix C). If outlier concentrations for arsenic were excluded from hazard estimates, the RME HI would drop to 0.7 (the CTE HI would remain the same at 0.2). No outliers were identified for groundwater seep sediment due to the small sample size.

5.1.2 Adolescent Trespasser – Floodplain Area 1C

Adolescent trespassers were assumed to be exposed to floodplain surface soil and groundwater seep sediment and surface water in Floodplain Area 1C. No COPCs were identified for groundwater seep sediment for Floodplain Area 1C. Both RME and CTE non-cancer hazards for the adolescent trespasser were less than the USEPA target of 1 (RME HI = 0.3; CTE HI = 0.04). Arsenic and cadmium exhibited the highest HQs for surface soil. Iron and manganese were the only COPCs in groundwater seep surface water with associated toxicity values. Tables 7.2.RME and 7.2.CTE present the hazards for the adolescent trespasser exposed to media in Floodplain Area 1C. Tables 9.2.RME and 9.2.CTE present a summary of hazards for all exposure routes and HQs for target organs.

Three arsenic concentrations in floodplain surface soil from Floodplain Area 1C were identified as outliers for this scenario (sample LL10-4-0-0.5 = 34 mg/kg, sample LL9-2-0-0.5 = 46 mg/kg, and sample LL9-1-0-0.5 = 49 mg/kg; refer to Table C-1 in Appendix C). If outlier concentrations for arsenic were excluded from hazard estimates, the RME and CTE HIs would remain the same (RME HI = 0.3 and CTE HI = 0.04). No outliers were identified for groundwater seep sediment due to the small sample size.

5.1.3 Adolescent Trespasser – Floodplain Area 2

Adolescent trespassers were assumed to be exposed to floodplain surface soil in Floodplain Area 2. Both RME and CTE non-cancer hazards for the adolescent trespasser

were less than the USEPA target of 1 (RME HI = 0.02; CTE HI = 0.006). Arsenic, cobalt, and iron exhibited the highest HQs for surface soil. Tables 7.3.RME and 7.3.CTE present the hazards for the adolescent trespasser exposed to media in Floodplain Area 2. Tables 9.3.RME and 9.3.CTE present a summary of hazards for all exposure routes and HQs for target organs.

Two arsenic concentrations in floodplain surface soil from Floodplain Area 2 were identified as outliers for this scenario (sample LL2-2-0-0.5 = 13 mg/kg and sample LL5-3-0-0.5 = 28 mg/kg; refer to Table C-1 in Appendix C). If outlier concentrations for arsenic were excluded from hazard estimates, the RME HI would remain the same (RME HI = 0.02) and the CTE HI would decrease slightly (CTE HI = 0.005).

5.1.4 Adolescent Trespasser – Floodplain Area 3

Adolescent trespassers were assumed to be exposed to floodplain surface soil in Floodplain Area 3. Both RME and CTE non-cancer hazards for the adolescent trespasser were less than the USEPA target of 1 (RME HI = 0.003; CTE HI = 0.0008). Chromium exhibited the highest HQ for surface soil. Tables 7.4.RME and 7.4.CTE present the hazards for the adolescent trespasser exposed to media in Floodplain Area 3. Tables 9.4.RME and 9.4.CTE present a summary of hazards for all exposure routes and HQs for target organs.

No outliers were identified for this scenario.

5.1.5 Village Park Recreational User – Adult

Adult Village Park recreational users were assumed to be exposed to surficial sediments in Sediment Area 1A, surface water from the eastern portion of DePue Lake, and groundwater seep sediment and surface water from Floodplain Area 1A. Wading and swimming scenarios were evaluated for this receptor. (Exposure to surface soils in Floodplain Area 1A was not evaluated as part of the OU5 HHRA, but rather will be addressed as part of the remedy for OU4.) Both RME and CTE non-cancer hazards for the adult recreational user under a wading scenario were less than the USEPA target of 1 (RME HI = 0.02; CTE HI = 0.006). Likewise, both RME and CTE non-cancer hazards for the adult recreational user under a swimming scenario were less than 1 (RME HI = 0.03; CTE HI = 0.01). Arsenic and cadmium exhibited the highest HQs for surficial sediment. For DePue Lake surface water, cadmium and manganese exhibited the highest HQs. Arsenic was the sole COPC for groundwater seep sediment, and manganese exhibited the highest HQ for groundwater seep surface water. Tables 7.5.RME and 7.5.CTE present the hazards for the adult recreational user exposed to media in and near the Village Park under a wading scenario; Tables 7.5A.RME and 7.5A. CTE present hazards for a swimming scenario. Tables 9.5.RME and 9.5.CTE present a summary of hazards for all exposure routes and HQs for

target organs under a wading scenario; Tables 9.5A.RME and 9.5A.CTE present hazards and target-organ-specific HQs for a swimming scenario.

One cadmium concentration in surficial sediment from Sediment Area 1A was identified as an outlier for this scenario (sample SD-E-0-0.5 = 110 mg/kg; refer to Table C-1 in Appendix C). If this outlier concentration for cadmium was excluded from hazard estimates, the RME and CTE HIs for a wading scenario would decrease slightly (RME HI = 0.01 and CTE HI = 0.005) and CTE HIs would remain the same. No outliers were identified for groundwater seep sediment due to the small sample size. Although the small surficial sediment dataset for PAHs from Sediment Area 1A precluded the identification of statistical outliers in the HHRA, the outlier analysis conducted for the RI did identify benzo(a)pyrene and dibenz(a,h)anthracene concentrations in sample SD-E (0-0.5 ft) (3.4 and 0.55 mg/kg, respectively) as site-wide statistical outliers (see Table 4-6 in the RI Report). However, the exclusion of these carcinogenic PAH concentrations would not affect hazard estimates (i.e., no available non-cancer toxicity values).

5.1.6 Village Park Recreational User – Child

Child Village Park recreational users were assumed to be exposed to surficial sediments in Sediment Area 1A, surface water from the eastern portion of DePue Lake, and groundwater seep sediment and surface water from Floodplain Area 1A. Wading and swimming scenarios were evaluated for this receptor. (As stated previously, exposure to surface soils in Floodplain Area 1A was not evaluated as part of the OU5 HHRA, but rather will be addressed as part of OU4.) The RME and CTE HIs for the child recreational user under a wading scenario were less than the USEPA target of 1 (RME HI = 0.08; CTE HI = 0.02). Likewise, both RME and CTE non-cancer hazards for the child recreational user under a swimming scenario were less than 1 (RME HI = 0.1; CTE HI = 0.03). Arsenic and cadmium exhibited the highest HQs for surficial sediment. For DePue Lake surface water, cadmium and manganese exhibited the highest HQs. Arsenic was the sole COPC for groundwater seep sediment, and manganese exhibited the highest HQ for groundwater seep surface water. Tables 7.6.RME and 7.6.CTE present the hazards for the child recreational user exposed to media in and near the Village Park under a wading scenario; Tables 7.6A.RME and 7.6A.CTE present hazards for a swimming scenario. Tables 9.6.RME and 9.6.CTE present a summary of hazards for all exposure routes and HQs for target organs under a wading scenario; Tables 9.6A.RME and 9.6A.CTE present hazards and target-organ-specific HQs for a swimming scenario.

One cadmium concentration in surficial sediment from Sediment Area 1A was identified as an outlier for this scenario (sample SD-E-0-0.5 = 110 mg/kg; refer to Table C-1 in Appendix C). If this outlier concentration for cadmium was excluded from hazard estimates, the RME HI for a wading scenario would decrease slightly (RME HI = 0.06) and the CTE HI would

remain the same (CTE HI = 0.02). This same trend would be observed for a swimming scenario, i.e., RME HI would decrease slightly (RME HI = 0.08) and the CTE HI would remain the same (CTE HI = 0.03). No outliers were identified for groundwater seep sediment due to the small sample size. Although the small surficial sediment dataset for PAHs from Sediment Area 1A precluded the identification of statistical outliers in the HHRA, the outlier analysis conducted for the RI did identify benzo(a)pyrene and dibenz(a,h)anthracene concentrations in sample SD-E (0-0.5 ft) (3.4 and 0.55 mg/kg, respectively) as site-wide statistical outliers (see Table 4-6 in the RI Report). However, the exclusion of these carcinogenic PAH concentrations would not affect hazard estimates (i.e., no available non-cancer toxicity values).

5.1.7 Boater – Adult

Adult boaters were assumed to be exposed to lake-wide surficial sediments, lake-wide surface water from DePue Lake, and groundwater seep sediment and surface water from Floodplain Area 1A. Both RME and CTE non-cancer hazards for the adult boater were less than the USEPA target of 1 (RME HI = 0.03; CTE HI = 0.008). Arsenic and cadmium exhibited the highest HQs for surficial sediment. For DePue Lake surface water, cadmium and manganese exhibited the highest HQs. Arsenic was the sole COPC for groundwater seep sediment, and manganese exhibited the highest HQ for groundwater seep surface water. Tables 7.7.RME and 7.7.CTE present the hazards for the adult boater exposed to site media. Tables 9.7.RME and 9.7.CTE present a summary of hazards for all exposure routes and HQs for target organs.

Six arsenic concentrations in lake-wide surficial sediment were identified as outliers for this scenario (sample SD-A-0-0.5 = 27 mg/kg, sample P1-0-0.5 = 73 mg/kg, sample N.5-1-0-0.5 = 30 mg/kg, sample R1-0-0.5 = 27 mg/kg, sample O1-0-0.5 = 113 mg/kg, and sample L1.5-0-0.5 = 20 mg/kg; refer to Table C-1 in Appendix C). If outlier concentrations for arsenic were excluded from hazard estimates, the RME and CTE HIs would remain the same. No outliers were identified for groundwater seep sediment due to the small sample size.

5.1.8 Boater – Child

Child boaters were assumed to be exposed to lake-wide surficial sediments, lake-wide surface water from DePue Lake, and groundwater seep sediment and surface water from Floodplain Area 1A. Both RME and CTE non-cancer hazards for the child boater were less than the USEPA target of 1 (RME HI = 0.2; CTE HI = 0.06). Arsenic, cadmium, and cobalt exhibited the highest HQs for surficial sediment. For DePue Lake surface water, cadmium and manganese exhibited the highest HQs. Arsenic was the sole COPC for groundwater seep sediment, and manganese exhibited the highest HQ for groundwater seep surface water. Tables 7.8.RME and 7.8.CTE present the hazards for the child boater exposed to

site media. Tables 9.8.RME and 9.8.CTE present a summary of hazards for all exposure routes and HQs for target organs.

Six arsenic concentrations in lake-wide surficial sediment were identified as outliers for this scenario (sample SD-A-0-0.5 = 27 mg/kg, sample P1-0-0.5 = 73 mg/kg, sample N.5-1-0-0.5 = 30 mg/kg, sample R1-0-0.5 = 27 mg/kg, sample O1-0-0.5 = 113 mg/kg, and sample L1.5-0-0.5 = 20 mg/kg; refer to Table C-1 in Appendix C). If outlier concentrations for arsenic were excluded from hazard estimates, the RME and CTE HIs would remain the same. No outliers were identified for groundwater seep sediment due to the small sample size.

5.1.9 Boat Angler – Adult

Adult boat anglers were assumed to be exposed to lake-wide surficial sediments, lake-wide surface water from DePue Lake, groundwater seep sediment and surface water from Floodplain Area 1A, and lake-wide fish fillets. As stated previously in Section 2.5.3, lead was the only COPC for fish. Lead risks associated with fish consumption were quantified using the ALM and are presented in Section 5.4. Both RME and CTE non-cancer hazards for the adult boat angler were less than the USEPA target of 1 (RME HI = 0.06; CTE HI = 0.01). Arsenic, cadmium, and cobalt exhibited the highest HQs for surficial sediment. For DePue Lake surface water, cadmium and manganese exhibited the highest HQs. Arsenic was the sole COPC for groundwater seep sediment, and manganese exhibited the highest HQ for groundwater seep surface water. Tables 7.9.RME and 7.9.CTE present the hazards for the adult boat angler exposed to site media. Tables 9.9.RME and 9.9.CTE present a summary of hazards for all exposure routes and HQs for target organs.

Six arsenic concentrations in lake-wide surficial sediment were identified as outliers for this scenario (sample SD-A-0-0.5 = 27 mg/kg, sample P1-0-0.5 = 73 mg/kg, sample N.5-1-0-0.5 = 30 mg/kg, sample R1-0-0.5 = 27 mg/kg, sample O1-0-0.5 = 113 mg/kg, and sample L1.5-0-0.5 = 20 mg/kg; refer to Table C-1 in Appendix C). If outlier concentrations for arsenic were excluded from hazard estimates, the RME and CTE HIs would remain the same. No outliers were identified for groundwater seep sediment due to the small sample size.

5.1.10 Boat Angler – Child

Child boat anglers were assumed to be exposed to lake-wide surficial sediments, lake-wide surface water from DePue Lake, groundwater seep sediment and surface water from Floodplain Area 1A, and lake-wide fish fillets. As stated previously in Section 2.5.3, lead was the only COPC for fish fillets. Lead risks associated with fish consumption were quantified using the IEUBK and are presented in Section 5.4. The RME and CTE HIs for the child boat angler were less than the USEPA target of 1 (RME HI = 0.5; CTE HI = 0.09). Arsenic, cadmium, and cobalt exhibited the highest HQs for surficial sediment. For DePue

Lake surface water, cadmium and manganese exhibited the highest HQs. Arsenic was the sole COPC for groundwater seep sediment, and manganese exhibited the highest HQ for groundwater seep surface water. Tables 7.10.RME and 7.10.CTE present the hazards for the child boat angler exposed to site media. Tables 9.10.RME and 9.10.CTE present a summary of hazards for all exposure routes and HQs for target organs.

Six arsenic concentrations in lake-wide surficial sediment were identified as outliers for this scenario (sample SD-A-0-0.5 = 27 mg/kg, sample P1-0-0.5 = 73 mg/kg, sample N.5-1-0-0.5 = 30 mg/kg, sample R1-0-0.5 = 27 mg/kg, sample O1-0-0.5 = 113 mg/kg, and sample L1.5-0-0.5 = 20 mg/kg; refer to Table C-1 in Appendix C). If outlier concentrations for arsenic were excluded from hazard estimates, the RME HI would decrease slightly (RME HI = 0.4) and the CTE HI would remain the same (CTE HI = 0.09). No outliers were identified for groundwater seep sediment due to the small sample size.

5.1.11 Shoreline Angler – Adult

Adult shoreline anglers were assumed to be exposed to surficial sediments from Sediment Area 1A, surface water from the eastern portion of DePue Lake, groundwater seep sediment and surface water from Floodplain Area 1A, and lake-wide fish fillets. As stated previously in Section 2.5.3, lead was the only COPC for fish fillets. Lead risks associated with fish consumption were evaluated using the ALM and are presented in Section 5.4. Both RME and CTE non-cancer hazards for the adult shoreline angler were less than the USEPA target of 1 (RME HI = 0.01; CTE HI = 0.004). Arsenic and cadmium exhibited the highest HQs for surficial sediment. For DePue Lake surface water, cadmium and manganese exhibited the highest HQs. Arsenic was the sole COPC for groundwater seep sediment, and manganese exhibited the highest HQ for groundwater seep surface water. Tables 7.11.RME and 7.11.CTE present the hazards for the adult shoreline angler exposed to site media. Tables 9.11.RME and 9.11.CTE present a summary of hazards for all exposure routes and HQs for target organs.

No outliers were identified for this scenario. Although the small surficial sediment dataset for PAHs from Sediment Area 1A precluded the identification of statistical outliers in the HHRA, the outlier analysis conducted for the RI did identify benzo(a)pyrene and dibenz(a,h)anthracene concentrations in sample SD-E (0-0.5 ft) (3.4 and 0.55 mg/kg, respectively) as site-wide statistical outliers (see Table 4-6 in the RI Report). However, the exclusion of these carcinogenic PAH concentrations would not affect hazard estimates (i.e., no available non-cancer toxicity values).

5.1.12 Shoreline Angler – Child

Child shoreline anglers were assumed to be exposed to surficial sediments from Sediment Area 1A, surface water from the eastern portion of DePue Lake, groundwater seep sediment and surface water from Floodplain Area 1A, and lake-wide fish fillets. As stated previously in Section 2.5.3, lead was the only COPC for fish fillets. Lead risks associated with fish consumption were evaluated using the IEUBK and are presented in Section 5.4. The RME and CTE HIs for the child shoreline angler were less than the USEPA target of 1 (RME HI = 0.07; CTE HI = 0.02). Arsenic and cadmium exhibited the highest HQs for surficial sediment. For DePue Lake surface water, cadmium and manganese exhibited the highest HQs. Arsenic was the sole COPC for groundwater seep sediment, and manganese exhibited the highest HQ for groundwater seep surface water. Tables 7.12.RME and 7.12.CTE present the hazards for the child shoreline angler exposed to site media. Tables 9.12.RME and 9.12.CTE present a summary of hazards for all exposure routes and HQs for target organs.

No outliers were identified for this scenario. Although the small surficial sediment dataset for PAHs from Sediment Area 1A precluded the identification of statistical outliers in the HHRA, the outlier analysis conducted for the RI did identify benzo(a)pyrene and dibenz(a,h)anthracene concentrations in sample SD-E (0-0.5 ft) (3.4 and 0.55 mg/kg, respectively) as site-wide statistical outliers (see Table 4-6 in the RI Report). However, the exclusion of these carcinogenic PAH concentrations would not affect hazard estimates (i.e., no available non-cancer toxicity values).

5.1.13 Village Park Maintenance Worker

The adult Village Park maintenance worker was assumed to be exposed to surficial and subsurface sediments in Sediment Area 1A, surface water from the eastern portion of DePue Lake, and groundwater seep sediment and surface water from Floodplain Area 1A. (As stated previously, exposure to surface soils in Floodplain Area 1A was not evaluated as part of the OU5 HHRA, but rather will be addressed as part of OU4.) The non-cancer hazards for the Village Park maintenance worker were below the USEPA target of 1 (RME HI = 0.01; CTE HI = 0.004). Arsenic and cadmium exhibited the highest HQs for DePue Lake sediments. Cadmium and manganese exhibited the highest HQs for DePue Lake surface water. Arsenic was the sole COPC for groundwater seep sediment, and manganese exhibited the highest HQ for seep surface water. Tables 7.13.RME and 7.13.CTE present the hazards for the Village Park maintenance worker exposed to site media. Tables 9.13.RME and 9.13.CTE present a summary of hazards for all exposure routes and HQs for target organs.

Arsenic concentrations were identified as outliers in surficial and subsurface sediment from Sediment Area 1A. Specifically, arsenic was identified as an outlier in sample SD-A-0-0.5 with a concentration of 23 mg/kg and a duplicate concentration of 31 mg/kg. If these outlier concentrations were excluded from hazard estimates, the resulting RME and CTE HIs would remain the same (RME HI = 0.01 and CTE HI = 0.004). No outliers were identified for groundwater seep sediment due to the small sample size.

5.1.14 Utility Maintenance Worker

The adult utility maintenance worker was assumed to be exposed to surface and subsurface soil in Floodplain Area 1B and WWTP Transect LL-5, surficial and subsurface sediments in Sediment Area 1B, surface water from the eastern portion of DePue Lake, and groundwater seep sediment and surface water from Floodplain Area 1B. (Exposure to surface and subsurface soils in Floodplain Area 1A was not evaluated as part of the OU5 HHRA, but rather will be addressed as part of OU4.) The non-cancer hazards for the utility maintenance worker were well below the USEPA target of 1 (RME HI = 0.2; CTE HI = 0.03). Arsenic, cadmium, and zinc exhibited the highest HQs for floodplain soil. Arsenic, cadmium, cobalt, and mercury exhibited the highest HQs for DePue Lake sediments. Cadmium and manganese exhibited the highest HQs for DePue Lake surface water. Cadmium exhibited the highest HQ for groundwater seep sediment and seep surface water. Tables 7.14.RME and 7.14.CTE present the hazards for the utility maintenance worker exposed to site media. Tables 9.14.RME and 9.14.CTE present a summary of hazards for all exposure routes and HQs for target organs.

No outliers were identified for this scenario.

5.1.15 Wildlife Worker and Hunter

The adult wildlife worker and hunter was assumed to be exposed to surface and subsurface soil in Floodplain Area 2, surficial and subsurface sediments in Sediment Area 2, and lake-wide surface water from DePue Lake. The non-cancer hazards for the wildlife worker and hunter were well below the USEPA target of 1 (RME HI = 0.04; CTE HI = 0.02). Arsenic, chromium, cobalt, and iron exhibited the highest HQs for floodplain soil. Arsenic and iron exhibited the highest HQs for DePue Lake sediments. Cadmium and manganese exhibited the highest HQs for DePue Lake surface water. Tables 7.15.RME and 7.15.CTE present the hazards for the wildlife worker and hunter exposed to site media. Tables 9.15.RME and 9.15.CTE present a summary of hazards for all exposure routes and HQs for target organs.

Three arsenic concentrations were identified as outliers in floodplain surface and subsurface soil from Floodplain Area 2 (sample LL5-3-0-0.5 = 28 mg/kg, sample LL2-2-0.5-2.0 = 24 mg/kg, and sample LL5-3-0.5-2.0 = 23 mg/kg). If these arsenic concentrations

were excluded from hazard estimates, the resulting RME and CTE HIs would remain the same (RME HI = 0.04 and CTE HI = 0.02). No outliers were identified for surficial and subsurface sediment from Sediment Area 2.

5.1.16 Farmer

The adult farmer was assumed to be exposed to surface and subsurface soil in the agricultural portion of DePue Lake (i.e., Floodplain Area 2/3). The non-cancer hazards for the farmer were well below the USEPA target of 1 (RME HI = 0.005; CTE HI = 0.0007). Chromium was the sole COPC for floodplain soils. The farmer was assumed to be exposed to soils via ingestion, dermal contact, and inhalation. Tables 7.16.RME and 7.16.CTE present the hazards for the farmer exposed to floodplain soils. Tables 9.16.RME and 9.16.CTE present a summary of hazards for all exposure routes and HQs for target organs.

No outliers were identified for this scenario.

5.1.17 Lake-Wide Recreational User – Adult

The lake-wide recreational user was assumed to be exposed to lake-wide surface sediment and surface water from DePue Lake under a swimming scenario. The non-cancer hazards for the adult lake-wide recreational user were well below the USEPA target of 1 (RME HI = 0.2; CTE HI = 0.05). Cadmium exhibited the highest HQ for lake sediment and manganese exhibited the highest HQ for lake surface water. Tables 7.17.RME and 7.17.CTE present the hazards for the adult lake-wide recreational user exposed to lake sediments and surface water. Tables 9.17.RME and 9.17.CTE present a summary of hazards for all exposure routes (i.e., ingestion and dermal contact) and target-organ-specific HQs.

Six arsenic concentrations in lake-wide surficial sediment were identified as outliers (sample SD-A-0-0.5 = 27 mg/kg, sample P1-0-0.5 = 73 mg/kg, sample N.5-1-0-0.5 = 30 mg/kg, sample R1-0-0.5 = 27 mg/kg, sample O1-0-0.5 = 113 mg/kg, and sample L1.5-0-0.5 = 20 mg/kg; refer to Table C-1 in Appendix C). If outlier concentrations for arsenic were excluded from hazard estimates, the RME and CTE HIs would remain the same (RME HI = 0.2 and CTE HI = 0.05).

5.1.18 Lake-Wide Recreational User – Child

The lake-wide recreational user was assumed to be exposed to lake-wide surface sediment and surface water from DePue Lake under a swimming scenario. The non-cancer hazards for the child lake-wide recreational user were equal to or below the USEPA target of 1 (RME HI = 1; CTE HI = 0.3). Cadmium exhibited the highest HQ for lake sediment and manganese exhibited the highest HQ for lake surface water. Tables 7.18.RME and

7.18.CTE present the hazards for the adult lake-wide recreational user exposed to lake sediments and surface water. Tables 9.18.RME and 9.18.CTE present a summary of hazards for all exposure routes (i.e., ingestion and dermal contact) and target-organ-specific HQs.

Six arsenic concentrations in lake-wide surficial sediment were identified as outliers (sample SD-A-0-0.5 = 27 mg/kg, sample P1-0-0.5 = 73 mg/kg, sample N.5-1-0-0.5 = 30 mg/kg, sample R1-0-0.5 = 27 mg/kg, sample O1-0-0.5 = 113 mg/kg, and sample L1.5-0-0.5 = 20 mg/kg; refer to Table C-1 in Appendix C). If outlier concentrations for arsenic were excluded from hazard estimates, the RME and CTE HIs would remain the same (RME HI = 1 and CTE HI = 0.3).

5.2 Carcinogenic Risk

Carcinogenic risk is expressed as a probability of developing cancer over the course of a lifetime as a result of a given level of exposure (USEPA 1989) (also referred to as "excess lifetime cancer risk"). For a given chemical and exposure route, carcinogenic risk is calculated as follows:

$$Risk = E \times SF$$

where:

E = Chemical-specific intake rate (mg/kg-day)

SF = Chemical-specific slope factor $(mg/kg\text{-}day)^{-1}$

To assess overall cancer risk, risks from various COPCs are assumed to be additive and are summed (USEPA 1989).

The USEPA has established a range of cancer risks of 1×10^{-4} to 1×10^{-6} as a "target range within which the Agency strives to manage risks as part of a Superfund cleanup" (USEPA 1991b). The National Contingency Plan states that "for known or suspected carcinogens, acceptable exposure levels are generally concentration levels that represent and excess upper bound lifetime cancer risk to an individual of between 1×10^{-4} to 1×10^{-6}" (USEPA 2003c).

Cancer risks for each receptor are presented separately below (combined child and adult risks are presented for Village Park recreational users, boaters, boat anglers, shoreline anglers, and lake-wide recreational users). For those receptor groups that include a child life stage (e.g., trespasser, Village Park recreational user), the calculations of potential

cancer risks for mutagenic compounds (i.e., carcinogenic PAHs) are presented in Appendix F. These risk estimates are also presented in the Tables 7 and 9 series.

5.2.1 Adolescent Trespasser – Floodplain Area 1B

Adolescent trespassers were assumed to be exposed to floodplain surface soil and groundwater seep sediment and surface water in Floodplain Area 1B. Both RME and CTE cancer risks for the adolescent trespasser were within USEPA's target risk range (RME risk = 1 x 10^{-5}; CTE risk = 2 x 10^{-6}). Arsenic is the primary risk driver for surface soil and groundwater seep sediment (i.e., has cancer risks above 1 x 10^{-6} for these media). Specifically, arsenic has a cancer risk of 9 x 10^{-6} for surface soil under an RME scenario, a cancer risk of 2 x 10^{-6} for groundwater seep sediment under an RME scenario, and a cancer risk of 2 x 10^{-6} for surface soil under a CTE scenario. No carcinogenic COPCs were identified for groundwater seep surface water. Tables 7.1.RME and 7.1.CTE present the risks for the adolescent trespasser exposed to media in Floodplain Area 1B. Tables 9.1.RME and 9.1.CTE present a summary of risks for all exposure routes.

Two arsenic concentrations in floodplain surface soil from Floodplain Area 1B were identified as outliers for this scenario (sample LL7-2-0-0.5 = 73 mg/kg and sample LL7-1-0-0.5 = 390 mg/kg; refer to Table C-1 in Appendix C). If outlier concentrations for arsenic were excluded from risk estimates, resulting RME cancer risks would drop by almost an order of magnitude to 4 x 10^{-6} and resulting CTE risks would drop to 6 x 10^{-7}. No outliers were identified for groundwater seep sediment due to the small sample size.

5.2.2 Adolescent Trespasser – Floodplain Area 1C

Adolescent trespassers were assumed to be exposed to floodplain surface soil and groundwater seep sediment and surface water in Floodplain Area 1C. Both RME and CTE cancer risks for the adolescent trespasser were less than USEPA's target risk range (RME risk = 8 x 10^{-7}; CTE risk = 1 x 10^{-7}). Arsenic is the primary risk driver for surface soil, but chemical-specific risk for this COPC is less than 1 x 10^{-6}. No carcinogenic COPCs were identified for groundwater seep sediment or surface water. Tables 7.2.RME and 7.2.CTE present the risks for the adolescent trespasser exposed to media in Floodplain Area 1C. Tables 9.2.RME and 9.2.CTE present a summary of risks for all exposure routes.

Three arsenic concentrations in floodplain surface soil from Floodplain Area 1C were identified as outliers for this scenario (sample LL10-4-0-0.5 = 34 mg/kg, sample LL9-2-0-0.5 = 46 mg/kg, and sample LL9-1-0-0.5 = 49 mg/kg; refer to Table C-1 in Appendix C). If outlier concentrations for arsenic were excluded from risk estimates, the RME risk would remain the same at 8 x 10^{-7} and CTE risk would decrease to 8 x 10^{-8}. No outliers were identified for groundwater seep sediment due to the small sample size.

5.2.3 Adolescent Trespasser – Floodplain Area 2

Adolescent trespassers were assumed to be exposed to floodplain surface soil in Floodplain Area 2. Both RME and CTE risks for the adolescent trespasser were less than USEPA's target risk range (RME risk = 5 x 10^{-7}; CTE risk = 9 x 10^{-8}). Arsenic was the primary risk driver for surface soil with a cancer risk of 3 x 10^{-7} under an RME scenario and 6 x 10^{-8} under a CTE scenario. Tables 7.3.RME and 7.3.CTE present the risks for the adolescent trespasser exposed to media in Floodplain Area 2. Tables 9.3.RME and 9.3.CTE present a summary of risks for all exposure routes.

Two arsenic concentrations in floodplain surface soil from Floodplain Area 2 were identified as outliers for this scenario (sample LL2-2-0-0.5 = 13 mg/kg and sample LL5-3-0-0.5 = 28 mg/kg; refer to Table C-1 in Appendix C). If outlier concentrations for arsenic were excluded from risk estimates, the RME and CTE risks would decrease to 4 x 10^{-7} and 8 x 10^{-8}, respectively.

5.2.4 Adolescent Trespasser – Floodplain Area 3

Adolescent trespassers were assumed to be exposed to floodplain surface soil in Floodplain Area 3. Both RME and CTE risks for the adolescent trespasser were less than USEPA's target risk range (RME risk = 2 x 10^{-7}; CTE risk = 3 x 10^{-8}). Benzo(a)pyrene was the primary risk driver for surface soil with an RME risk of 1 x 10^{-7} and a CTE risk of 2 x 10^{-8}. Tables 7.4.RME and 7.4.CTE present the risks for the adolescent trespasser exposed to media in Floodplain Area 3. Tables 9.4.RME and 9.4.CTE present a summary of risks for all exposure routes.

No outliers were identified for this scenario.

5.2.5 Village Park Recreational User (Adult + Child)

Village Park recreational users were assumed to be exposed to surficial sediments in Sediment Area 1A, surface water from the eastern portion of DePue Lake, and groundwater seep sediment and surface water from Floodplain Area 1A. (As stated previously, exposure to surface soils in Floodplain Area 1A was not evaluated as part of the OU5 HHRA, but rather will be addressed as part of OU4.) A wading scenario and a swimming scenario were evaluated for the Village Park recreational user. Both RME and CTE risks for the recreational user (adult + child) under a wading scenario were within USEPA's target risk range (RME risk = 2 x 10^{-5}; CTE risk = 3 x 10^{-6}). Under a wading scenario, arsenic and benzo(a)pyrene were the primary risk drivers for surficial sediment with respective RME cancer risks of 1 x 10^{-6} and 1 x 10^{-5} and respective CTE cancer risks of 2 x 10^{-7} and 2 x 10^{-6}. Under a swimming scenario, both RME and CTE risks for the recreational user (adult +

child) were within USEPA's target risk range (RME risk = 3 x 10^{-5}; CTE risk = 4 x 10^{-6}). Under a swimming scenario, arsenic and benzo(a)pyrene were the primary risk drivers for surficial sediment with respective RME cancer risks of 1 x 10^{-6} and 2 x 10^{-5} and respective CTE cancer risks of 2 x 10^{-7} and 2 x 10^{-6}. No carcinogenic COPCs were identified for DePue Lake surface water or groundwater seep surface water. Arsenic was the sole COPC for groundwater seep sediment with an RME cancer risk of 8 x 10^{-7} and a CTE cancer risk of 1 x 10^{-7}.

Tables 7.5.RME and 7.5.CTE present the risks for the adult recreational user under a wading scenario, and Tables 7.6.RME and 7.6.CTE present the risks for the child recreational user under a wading scenario. Tables 7.5A.RME and 7.5A.CTE present the risks for the adult recreational user under a swimming scenario, and Tables 7.6A.RME and 7.6A.CTE present the risks for the child recreational user under a swimming scenario. Tables 9.5.RME and 9.5.CTE present a summary of risks for the adult recreational user under a wading scenario. Tables 9.5A.RME and 9.5A.CTE present a summary of risks for the adult recreational user under a swimming scenario. Tables 9.6.RME and 9.6.CTE present a summary of risks for the child recreational user under a wading scenario. Tables 9.6A.RME and 9.6A.CTE present a summary of risks for the adult recreational user under a swimming scenario. Tables 9.6B.RME and 9.6B.CTE present a summary of the combined risks for the adult and child recreational users under a wading scenario, and Tables 9.6C.RME and 9.6C.CTE present a summary of the combined risks for the adult and child recreational users under a swimming scenario.

One cadmium concentration in surficial sediment from Sediment Area 1A was identified as an outlier for this scenario (sample SD-E-0-0.5 = 113 mg/kg; refer to Table C-1 in Appendix C). If this outlier concentration for cadmium was excluded from risk estimates for the wading scenario, the RME and CTE risks would remain the same (RME risk = 2 x 10^{-5} and CTE risk = 3 x 10^{-6}) because cadmium is not a carcinogen via the oral and dermal exposure routes. Likewise, risks would remain the same for the swimming scenario if the cadmium outlier was excluded from risk estimates. No outliers were identified for groundwater seep sediment due to the small sample size. Although the small surficial sediment dataset for PAHs from Sediment Area 1A precluded the identification of statistical outliers in the HHRA, the outlier analysis conducted for the RI did identify benzo(a)pyrene and dibenz(a,h)anthracene concentrations in sample SD-E (0-0.5 ft) (3.4 and 0.55 mg/kg, respectively) as site-wide statistical outliers (see Table 4-6 in the RI Report).

5.2.6 Boater (Adult + Child)

Boaters were assumed to be exposed to lake-wide surficial sediments, lake-wide surface water, and groundwater seep sediment and surface water from Floodplain Area 1A. Both RME and CTE risks for the boater (adult + child) were within USEPA's target risk range

(RME risk = 1 x 10^{-5}; CTE risk = 2 x 10^{-6}). Arsenic and benzo(a)pyrene were the primary risk drivers for surficial sediment with respective RME cancer risks of 1 x 10^{-6} and 6 x 10^{-6} and respective CTE cancer risks of 2 x 10^{-7} and 1 x 10^{-6}. No carcinogenic COPCs were identified for DePue Lake surface water or groundwater seep surface water. Arsenic was the sole COPC for groundwater seep sediment with an RME cancer risk of 6 x 10^{-7} and a CTE cancer risk of 1 x 10^{-7}. Tables 7.7.RME and 7.7.CTE present the risks for the adult boater, and Tables 7.8.RME and 7.8.CTE present the risks for the child boater. Tables 9.7.RME and 9.7.CTE present the risks for the adult boater, and Tables 9.8.RME and 9.8.CTE present the risks for the child boater. Tables 9.8A.RME and 9.8A.CTE present a summary of the combined risks for the adult and child boater.

Six arsenic concentrations in lake-wide surficial sediment were identified as outliers for this scenario (sample SD-A-0-0.5 = 27 mg/kg, sample P1-0-0.5 = 73 mg/kg, sample N.5-1-0-0.5 = 30 mg/kg, sample R1-0-0.5 = 27 mg/kg, sample O1-0-0.5 = 113 mg/kg, and sample L1.5-0-0.5 = 20 mg/kg; refer to Table C-1 in Appendix C). Benzo(a)pyrene and dibenz(a,h)anthracene concentrations in sediment sample SD-E-0-0.5 were also identified as outliers with respective concentrations of 3.4 mg/kg and 0.55 mg/kg. If outlier concentrations for arsenic, benzo(a)pyrene, and dibenz(a,h)anthracene were excluded from risk estimates, RME and CTE risks would remain the same. No outliers were identified for groundwater seep sediment due to the small sample size.

5.2.7 Boat Angler (Adult + Child)

Boat anglers were assumed to be exposed to lake-wide surficial sediments, lake-wide surface water, groundwater seep sediment and surface water from Floodplain Area 1A, and lake-wide fish fillets. Lead risks associated with fish fillet consumption were evaluated using the ALM (for adults) and IEUBK model (for children). Results of the lead modeling are presented in Section 5.4. Both RME and CTE risks for the boat angler (adult + child) were within USEPA's target risk range (RME risk = 2 x 10^{-5}; CTE risk = 3 x 10^{-6}). Arsenic and benzo(a)pyrene were the primary risk drivers for surficial sediment with respective RME cancer risks of 2 x 10^{-6} and 1 x 10^{-5} and respective CTE cancer risks of 3 x 10^{-7} and 2 x 10^{-6}. No carcinogenic COPCs were identified for DePue Lake surface water or groundwater seep surface water. Arsenic was the sole COPC for groundwater seep sediment with a RME cancer risk of 1 x 10^{-6} and a CTE cancer risk of 2 x 10^{-7}. Tables 7.9.RME and 7.9.CTE present the risks for the adult boat angler, and Tables 7.10.RME and 7.10.CTE present the risks for the child boat angler. Tables 9.9.RME and 9.9.CTE present a summary of risks for the adult boat angler, and Tables 9.10.RME and 9.10.CTE present a summary of risks for the child boat angler. Tables 9.10A.RME and 9.10A.CTE present a summary of the combined risks for the adult and child boat angler.

Six arsenic concentrations in lake-wide surficial sediment were identified as outliers for this scenario (sample SD-A-0-0.5 = 27 mg/kg, sample P1-0-0.5 = 73 mg/kg, sample N.5-1-0-0.5 = 30 mg/kg, sample R1-0-0.5 = 27 mg/kg, sample O1-0-0.5 = 113 mg/kg, and sample L1.5-0-0.5 = 20 mg/kg; refer to Table C-1 in Appendix C). Benzo(a)pyrene and dibenz(a,h)anthracene concentrations in sediment sample SD-E-0-0.5 were also identified as outliers with respective concentrations of 3.4 mg/kg and 0.55 mg/kg. If outlier concentrations for arsenic, benzo(a)pyrene, and dibenz(a,h)anthracene were excluded from risk estimates, the RME and CTE risks would remain the same. No outliers were identified for groundwater seep sediment due to small sample size.

5.2.8 Shoreline Angler (Adult + Child)

Shoreline anglers were assumed to be exposed to surficial sediments from Sediment Area 1A, surface water from the eastern portion of DePue Lake, groundwater seep sediment and surface water from Floodplain Area 1A, and lake-wide fish fillets. Lead risks associated with fish fillet consumption were evaluated using the ALM (for adults) and IEUBK model (for children). Results of the lead modeling are presented in Section 5.4. Both RME and CTE risks for the shoreline angler (adult + child) were within USEPA's target risk range (RME risk = 1×10^{-5}; CTE risk = 2×10^{-6}). Arsenic, benzo(a)pyrene, and dibenz(a,h)anthracene were the primary risk drivers for surficial sediment with respective RME cancer risks of 9×10^{-7}, 9×10^{-6}, and 2×10^{-6}; respective CTE cancer risks for these COPCs were 1×10^{-7}, 1×10^{-6}, and 2×10^{-7}. No carcinogenic COPCs were identified for DePue Lake surface water or groundwater seep surface water. Arsenic was the sole COPC for groundwater seep sediment with a RME cancer risk of 7×10^{-7} and a CTE cancer risk of 1×10^{-7}. Tables 7.11.RME and 7.11.CTE present the risks for the adult boat angler, and Tables 7.12.RME and 7.12.CTE present the risks for the child boat angler. Tables 9.11.RME and 9.11.CTE present a summary of risks for the adult shoreline angler, and Tables 9.12.RME and 9.12.CTE present a summary of risks for the child shoreline angler. Tables 9.12A.RME and 9.12A.CTE present a summary of the combined risks for the adult and child shoreline angler.

No outliers were identified for this scenario. Although the small surficial sediment dataset for PAHs from Sediment Area 1A precluded the identification of statistical outliers in the HHRA, the outlier analysis conducted for the RI did identify benzo(a)pyrene and dibenz(a,h)anthracene concentrations in sample SD-E (0-0.5 ft) (3.4 and 0.55 mg/kg, respectively) as site-wide statistical outliers (see Table 4-6 in the RI Report).

5.2.9 Village Park Maintenance Worker

The adult Village Park maintenance worker was assumed to be exposed to surficial and subsurface sediments in Sediment Area 1A, surface water from the eastern portion of

DePue Lake, and groundwater seep sediment and surface water from Floodplain Area 1A. (As stated previously, exposure to surface soils in Floodplain Area 1A was not evaluated as part of the OU5 HHRA, but rather will be addressed as part of OU4.) The RME and CTE cancer risks for the Village Park maintenance worker were within or less than USEPA's target risk range (RME risk = 1 x 10^{-6}; CTE risk = 1 x 10^{-7}). Benzo(a)pyrene, arsenic, and dibenz(a,h)anthracene were the primary risk drivers for DePue Lake sediments with respective RME cancer risks of 6 x 10^{-7}, 2 x 10^{-7}, and 1 x 10^{-7} and respective CTE cancer risks of 5 x 10^{-8}, 2 x 10^{-8}, and 9 x 10^{-9}. No carcinogenic COPCs were identified for DePue Lake surface water or groundwater seep surface water. Arsenic was the sole COPC for groundwater seep sediment with a RME cancer risk of 2 x 10^{-7} and a CTE cancer risk of 2 x 10^{-8}. Tables 7.13.RME and 7.13.CTE present the risks for the Village Park maintenance worker exposed to site media. Tables 9.13.RME and 9.13.CTE present a summary of risks for all exposure routes.

Benzo(a)pyrene, dibenz(a,h)anthracene, and arsenic concentrations were identified as outliers in surficial and subsurface sediment from Sediment Area 1A. Specifically, benzo(a)pyrene was identified as an outlier in sample SD-E-0-0.5 with a concentration of 3.4 mg/kg. Dibenz(a,h)anthracene was also identified as an outlier in sample SD-E-0-0.5 with a concentration of 0.55 mg/kg. Arsenic was identified as an outlier in sample SD-A-0-0.5 with a concentration of 23 mg/kg and a duplicate concentration of 31 mg/kg. If these outlier concentrations were excluded from risk estimates, the resulting RME and CTE risks would decrease to 7 x 10^{-7} and 6 x 10^{-8}, respectively. No outliers were identified for groundwater seep sediment due to small sample size.

5.2.10 Utility Maintenance Worker

The adult utility maintenance worker was assumed to be exposed to surface and subsurface soil in Floodplain Area 1B and WWTP Transect LL-5, surficial and subsurface sediments in Sediment Area 1B, surface water from the eastern portion of DePue Lake, and groundwater seep sediment and surface water from Floodplain Area 1B. (Exposure to surface and subsurface soils in Floodplain Area 1A was not evaluated as part of the OU5 HHRA, but rather will be addressed as part of OU4.) The RME and CTE risks for the utility maintenance worker were within or less than USEPA's target risk range (RME risk = 6 x 10^{-6}; CTE risk = 4 x 10^{-7}). Arsenic and benzo(a)pyrene were the primary risk drivers for floodplain soil with respective RME cancer risks of 5 x 10^{-6} and 2 x 10^{-7} and respective CTE cancer risks of 3 x 10^{-7} and 1 x 10^{-8}. Arsenic was the primary risk driver for DePue Lake sediments and groundwater seep sediments. Specifically, arsenic risks for DePue Lake sediments under RME and CTE scenarios were 2 x 10^{-7} and 2 x 10^{-8}, respectively. Arsenic risks for groundwater seep sediments under RME and CTE scenarios were 2 x 10^{-7} and 2 x 10^{-8}, respectively. No carcinogenic COPCs were identified for DePue Lake surface water or groundwater seep surface water. Tables 7.14.RME and 7.14.CTE present the risks for the

utility maintenance worker exposed to site media. Tables 9.14.RME and 9.14.CTE present a summary of risks for all exposure routes.

No outliers were identified for this scenario.

5.2.11 Wildlife Worker and Hunter

The adult wildlife worker and hunter was assumed to be exposed to surface and subsurface soil in Floodplain Area 2, surficial and subsurface sediments in Sediment Area 2, and lake-wide surface water from DePue Lake. The RME and CTE risks for the wildlife worker and hunter were within or below USEPA's target risk range (RME risk = 2×10^{-6}; CTE risk = 3×10^{-7}). Arsenic was the primary risk driver for floodplain soil and DePue Lake sediment. Arsenic risk under a RME scenario for floodplain soil was 7×10^{-7} and CTE risk was 2×10^{-7}. Arsenic risk under a RME scenario for DePue Lake sediment was 5×10^{-7} and CTE risk was 7×10^{-8}. No carcinogenic COPCs were identified for DePue Lake surface water. Tables 7.15.RME and 7.15.CTE present the risks for the wildlife worker and hunter exposed to site media. Tables 9.15.RME and 9.15.CTE present a summary of risks for all exposure routes.

Three arsenic concentrations were identified as outliers in floodplain surface and subsurface soil from Floodplain Area 2 (sample LL5-3-0-0.5 = 28 mg/kg, sample LL2-2-0.5-2.0 = 24 mg/kg, and sample LL5-3-0.5-2.0 = 23 mg/kg). If these arsenic concentrations were excluded from risk estimates, the resulting RME risk would decrease slightly (RME risk = 1×10^{-6}) and CTE risks would remain the same (CTE risk = 3×10^{-7}). No outliers were identified for surficial and subsurface sediment from Sediment Area 2.

5.2.12 Farmer

The adult farmer was assumed to be exposed to surface and subsurface soil in the agricultural portion of DePue Lake (i.e., Floodplain Area 2/3). The risks for the farmer were below USEPA's target risk range (RME risk = 9×10^{-7}; CTE risk = 4×10^{-8}). Chromium was the only COPCs identified for agricultural soils. Chromium is carcinogenic via the inhalation route. Tables 7.16.RME and 7.16.CTE present the risks for the farmer exposed to floodplain soils. Tables 9.16.RME and 9.16.CTE present a summary of risks for all exposure routes.

No outliers were identified for this scenario.

5.2.13 Lake-Wide Recreational User (Adult + Child)

Lake-wide recreational users were assumed to be exposed to lake-wide surficial sediments and surface water from DePue Lake under a swimming scenario. Both RME and CTE risks for the lake-wide recreational user (adult + child) were within USEPA's target risk range

(RME risk = 7 x 10^{-5}; CTE risk = 1 x 10^{-5}). Arsenic and benzo(a)pyrene were the primary risk drivers for surficial sediment with respective RME cancer risks of 7 x 10^{-6} and 4 x 10^{-5} and respective CTE cancer risks of 1 x 10^{-6} and 6 x 10^{-6}. No carcinogenic COPCs were identified for DePue Lake surface water. Tables 7.17.RME and 7.17.CTE present the risks for the adult lake-wide recreational user, and Tables 7.18.RME and 7.18.CTE present the risks for the child lake-wide recreational user. Tables 9.17.RME and 9.17.CTE present a summary of risks for the adult lake-wide recreational user, and Tables 9.18.RME and 9.18.CTE present a summary of risks for the child lake-wide recreational user. Tables 9.18A.RME and 9.18A.CTE present a summary of the combined risks for the adult and child lake-wide recreational user.

Six arsenic concentrations in lake-wide surficial sediment were identified as outliers (sample SD-A-0-0.5 = 27 mg/kg, sample P1-0-0.5 = 73 mg/kg, sample N.5-1-0-0.5 = 30 mg/kg, sample R1-0-0.5 = 27 mg/kg, sample O1-0-0.5 = 113 mg/kg, and sample L1.5-0-0.5 = 20 mg/kg; refer to Table C-1 in Appendix C). Benzo(a)pyrene and dibenz(a,h)anthracene concentrations in sediment sample SD-E-0-0.5 were also identified as outliers with respective concentrations of 3.4 mg/kg and 0.55 mg/kg.

5.3 Summary of Non-Cancer Hazards and Cancer Risks

The following table presents a summary of total risks and hazards (risks/hazards that exceed a cancer risk of 1 x 10^{-4} and an HI of 1 are highlighted):

Table 10

Summary of Receptor-Specific Risks and Hazards

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Receptor	Exposure Media	Exposure Route	RME Cancer Risks	RME Non-Cancer Hazards	CTE Cancer Risks	CTE Non-Cancer Hazards
Trespasser, Adolescent	Floodplain surface soil (Floodplain Area 1B)	Ingestion, dermal contact	1.E-05	4.E-01	2.E-06	1.E-01
	Groundwater seep sediment (Floodplain Area 1B)	Ingestion, dermal contact	2.E-06	4.E-01	3.E-07	8.E-02
	Groundwater seep surface water (Floodplain Area 1B)	Ingestion, dermal contact	0.E+00	3.E-02	0.E+00	1.E-02
		TOTAL:	**1.E-05**	**8.E-01**	**2.E-06**	**2.E-01**
Trespasser, Adolescent	Floodplain surface soil (Floodplain Area 1C)	Ingestion, dermal contact	8.E-07	3.E-01	1.E-07	2.E-02
	Groundwater seep sediment (Floodplain Area 1C)	Ingestion, dermal contact	No COPCs	No COPCs	No COPCs	No COPCs
	Groundwater seep surface water (Floodplain Area 1C)	Ingestion, dermal contact	0.E+00	3.E-02	0.E+00	2.E-02
		TOTAL:	**8.E-07**	**3.E-01**	**1.E-07**	**4.E-02**
Trespasser, Adolescent	Floodplain surface soil (Floodplain Area 2)	Ingestion, dermal contact	**5.E-07**	**2.E-02**	**9.E-08**	**6.E-03**
Trespasser, Adolescent	Floodplain surface soil (Floodplain Area 3)	Ingestion, dermal contact	**2.E-07**	**3.E-03**	**3.E-08**	**8.E-04**

Table 10

Summary of Receptor-Specific Risks and Hazards

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Receptor	Exposure Media	Exposure Route	RME Cancer Risks	RME Non-Cancer Hazards	CTE Cancer Risks	CTE Non-Cancer Hazards
Village Park Recreational User, Adult (Wading Scenario)	Floodplain surface soil (Floodplain Area 1A)	Ingestion, dermal contact	N/A	N/A	N/A	N/A
	DePue Lake surficial sediment (Sediment Area 1A)	Ingestion, dermal contact	3.E-06	8.E-03	3.E-07	2.E-03
	DePue Lake surface water (Eastern portion of lake)	Ingestion, dermal contact	0.E+00	4.E-03	0.E+00	2.E-03
	Groundwater seep sediment (Floodplain Area 1A)	Ingestion, dermal contact	3.E-07	2.E-03	2.E-08	4.E-04
	Groundwater seep surface water (Floodplain Area 1A)	Ingestion, dermal contact	0.E+00	3.E-03	0.E+00	1.E-03
		TOTAL:	**4.E-06**	**2.E-02**	**3.E-07**	**6.E-03**
Village Park Recreational User, Child (Wading Scenario)	Floodplain surface soil (Floodplain Area 1A)	Ingestion, dermal contact	N/A	N/A	N/A	N/A
	DePue Lake surficial sediment (Sediment Area 1A)	Ingestion, dermal contact	1.E-05	5.E-02	2.E-06	1.E-02
	DePue Lake surface water (Eastern portion of lake)	Ingestion, dermal contact	0.E+00	1.E-02	0.E+00	5.E-03
	Groundwater seep sediment (Floodplain Area 1A)	Ingestion, dermal contact	5.E-07	1.E-02	1.E-07	3.E-03
	Groundwater seep surface water (Floodplain Area 1A)	Ingestion, dermal contact	0.E+00	6.E-03	0.E+00	3.E-03
		TOTAL:	**1.E-05**	**8.E-02**	**2.E-06**	**2.E-02**

Table 10

Summary of Receptor-Specific Risks and Hazards

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Receptor	Exposure Media	Exposure Route	RME Cancer Risks	RME Non-Cancer Hazards	CTE Cancer Risks	CTE Non-Cancer Hazards
Village Park Recreational User, Adult + Child (Wading Scenario)	Floodplain surface soil (Floodplain Area 1A)	Ingestion, dermal contact	N/A	--	N/A	--
	DePue Lake surficial sediment (Sediment Area 1A)	Ingestion, dermal contact	2.E-05	--	3.E-06	--
	DePue Lake surface water (Eastern portion of lake)	Ingestion, dermal contact	0.E+00	--	0.E+00	--
	Groundwater seep sediment (Floodplain Area 1A)	Ingestion, dermal contact	8.E-07	--	1.E-07	--
	Groundwater seep surface water (Floodplain Area 1A)	Ingestion, dermal contact	0.E+00	--	0.E+00	--
		TOTAL:	**2.E-05**	**--**	**3.E-06**	**--**

Table 10

Summary of Receptor-Specific Risks and Hazards

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Receptor	Exposure Media	Exposure Route	RME Cancer Risks	RME Non-Cancer Hazards	CTE Cancer Risks	CTE Non-Cancer Hazards
Village Park Recreational User, Adult (Swimming Scenario)	Floodplain surface soil (Floodplain Area 1A)	Ingestion, dermal contact	N/A	N/A	N/A	N/A
	DePue Lake surficial sediment (Sediment Area 1A)	Ingestion, dermal contact	8.E-06	1.E-02	5.E-07	2.E-03
	DePue Lake surface water (Eastern portion of lake)	Ingestion, dermal contact	0.E+00	1.E-02	0.E+00	7.E-03
	Groundwater seep sediment (Floodplain Area 1A)	Ingestion, dermal contact	3.E-07	2.E-03	2.E-08	4.E-04
	Groundwater seep surface water (Floodplain Area 1A)	Ingestion, dermal contact	0.E+00	3.E-03	0.E+00	1.E-03
		TOTAL:	**8.E-06**	**3.E-02**	**5.E-07**	**1.E-02**
Village Park Recreational User, Child (Swimming Scenario)	Floodplain surface soil (Floodplain Area 1A)	Ingestion, dermal contact	N/A	N/A	N/A	N/A
	DePue Lake surficial sediment (Sediment Area 1A)	Ingestion, dermal contact	2.E-05	6.E-02	3.E-06	1.E-02
	DePue Lake surface water (Eastern portion of lake)	Ingestion, dermal contact	0.E+00	2.E-02	0.E+00	1.E-02
	Groundwater seep sediment (Floodplain Area 1A)	Ingestion, dermal contact	5.E-07	1.E-02	1.E-07	3.E-03
	Groundwater seep surface water (Floodplain Area 1A)	Ingestion, dermal contact	0.E+00	6.E-03	0.E+00	3.E-03
		TOTAL:	**2.E-05**	**1.E-01**	**3.E-06**	**3.E-02**

Table 10

Summary of Receptor-Specific Risks and Hazards

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Receptor	Exposure Media	Exposure Route	RME Cancer Risks	RME Non-Cancer Hazards	CTE Cancer Risks	CTE Non-Cancer Hazards
Village Park Recreational User, Adult + Child (Swimming Scenario)	Floodplain surface soil (Floodplain Area 1A)	Ingestion, dermal contact	N/A	--	N/A	--
	DePue Lake surficial sediment (Sediment Area 1A)	Ingestion, dermal contact	3.E-05	--	4.E-06	--
	DePue Lake surface water (Eastern portion of lake)	Ingestion, dermal contact	0.E+00	--	0.E+00	--
	Groundwater seep sediment (Floodplain Area 1A)	Ingestion, dermal contact	8.E-07	--	1.E-07	--
	Groundwater seep surface water (Floodplain Area 1A)	Ingestion, dermal contact	0.E+00	--	0.E+00	--
		TOTAL:	**3.E-05**	**--**	**4.E-06**	**--**
Boater, Adult	DePue Lake surficial sediment (Lake-wide)	Ingestion, dermal contact	3.E-06	2.E-02	2.E-07	6.E-03
	DePue Lake surface water (Lake-wide)	Ingestion, dermal contact	0.E+00	2.E-03	0.E+00	1.E-03
	Groundwater seep sediment (Floodplain Area 1A)	Ingestion, dermal contact	2.E-07	2.E-03	2.E-08	3.E-04
	Groundwater seep surface water (Floodplain Area 1A)	Ingestion, dermal contact	0.E+00	1.E-03	0.E+00	6.E-04
		TOTAL:	**3.E-06**	**3.E-02**	**3.E-07**	**8.E-03**

Table 10

Summary of Receptor-Specific Risks and Hazards

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Receptor	Exposure Media	Exposure Route	RME Cancer Risks	RME Non-Cancer Hazards	CTE Cancer Risks	CTE Non-Cancer Hazards
Boater, Child	DePue Lake surficial sediment (Lake-wide)	Ingestion, dermal contact	8.E-06	2.E-01	2.E-06	5.E-02
	DePue Lake surface water (Lake-wide)	Ingestion, dermal contact	0.E+00	5.E-03	0.E+00	3.E-03
	Groundwater seep sediment (Floodplain Area 1A)	Ingestion, dermal contact	4.E-07	1.E-02	9.E-08	2.E-03
	Groundwater seep surface water (Floodplain Area 1A)	Ingestion, dermal contact	0.E+00	3.E-03	0.E+00	1.E-03
		TOTAL:	**8.E-06**	**2.E-01**	**2.E-06**	**6.E-02**
Boater, Adult + Child	DePue Lake surficial sediment (Lake-wide)	Ingestion, dermal contact	1.E-05	--	2.E-06	--
	DePue Lake surface water (Lake-wide)	Ingestion, dermal contact	0.E+00	--	0.E+00	--
	Groundwater seep sediment (Floodplain Area 1A)	Ingestion, dermal contact	6.E-07	--	1.E-07	--
	Groundwater seep surface water (Floodplain Area 1A)	Ingestion, dermal contact	0.E+00	--	0.E+00	--
		TOTAL:	**1.E-05**	**--**	**2.E-06**	**--**

Table 10

Summary of Receptor-Specific Risks and Hazards

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Receptor	Exposure Media	Exposure Route	RME Cancer Risks	RME Non-Cancer Hazards	CTE Cancer Risks	CTE Non-Cancer Hazards
Boat Angler, Adult	DePue Lake surficial sediment (Lake-wide)	Ingestion, dermal contact	6.E-06	5.E-02	4.E-07	9.E-03
	DePue Lake surface water (Lake-wide)	Ingestion, dermal contact	0.E+00	5.E-03	0.E+00	2.E-03
	Groundwater seep sediment (Floodplain Area 1A)	Ingestion, dermal contact	5.E-07	3.E-03	3.E-08	5.E-04
	Groundwater seep surface water (Floodplain Area 1A)	Ingestion, dermal contact	0.E+00	2.E-03	0.E+00	1.E-03
	Fish Fillets (Lake-wide)	Ingestion	NA [a]	NA [a]	NA [a]	NA [a]
		TOTAL:	**6.E-06**	**6.E-02**	**4.E-07**	**1.E-02**
Boat Angler, Child	DePue Lake surficial sediment (Lake-wide)	Ingestion, dermal contact	2.E-05	4.E-01	3.E-06	8.E-02
	DePue Lake surface water (Lake-wide)	Ingestion, dermal contact	0.E+00	1.E-02	0.E+00	4.E-03
	Groundwater seep sediment (Floodplain Area 1A)	Ingestion, dermal contact	8.E-07	2.E-02	1.E-07	4.E-03
	Groundwater seep surface water (Floodplain Area 1A)	Ingestion, dermal contact	0.E+00	5.E-03	0.E+00	2.E-03
	Fish Fillets (Lake-wide)	Ingestion	NA [a]	NA [a]	NA [a]	NA [a]
		TOTAL:	**2.E-05**	**5.E-01**	**3.E-06**	**9.E-02**

Table 10

Summary of Receptor-Specific Risks and Hazards

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Receptor	Exposure Media	Exposure Route	RME Cancer Risks	RME Non-Cancer Hazards	CTE Cancer Risks	CTE Non-Cancer Hazards
Boat Angler, Adult + Child	DePue Lake surficial sediment(Lake-wide)	Ingestion, dermal contact	2.E-05	--	3.E-06	--
	DePue Lake surface water (Lake-wide)	Ingestion, dermal contact	0.E+00	--	0.E+00	--
	Groundwater seep sediment (Floodplain Area 1A)	Ingestion, dermal contact	1.E-06	--	2.E-07	--
	Groundwater seep surface water (Floodplain Area 1A)	Ingestion, dermal contact	0.E+00	--	0.E+00	--
	Fish Fillets (Lake-wide)	Ingestion	NA [a]	--	NA [a]	--
		TOTAL:	**2.E-05**	--	**3.E-06**	--
Shoreline Angler, Adult	DePue Lake surficial sediment (Sediment Area 1A)	Ingestion, dermal contact	3.E-06	7.E-03	2.E-07	1.E-03
	DePue Lake surface water (Eastern portion of lake)	Ingestion, dermal contact	0.E+00	4.E-03	0.E+00	2.E-03
	Groundwater seep sediment (Floodplain Area 1A)	Ingestion, dermal contact	3.E-07	2.E-03	2.E-08	3.E-04
	Groundwater seep surface water (Floodplain Area 1A)	Ingestion, dermal contact	0.E+00	2.E-03	0.E+00	1.E-03
	Floodplain surface soil (Floodplain Area 1A)	Ingestion, dermal contact	N/A	N/A	N/A	N/A
	Fish Fillets (Lake-wide)	Ingestion	NA [a]	NA [a]	NA [a]	NA [a]
		TOTAL:	**3.E-06**	**1.E-02**	**2.E-07**	**4.E-03**

Table 10

Summary of Receptor-Specific Risks and Hazards

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Receptor	Exposure Media	Exposure Route	RME Cancer Risks	RME Non-Cancer Hazards	CTE Cancer Risks	CTE Non-Cancer Hazards
Shoreline Angler, Child	DePue Lake surficial sediment (Sediment Area 1A)	Ingestion, dermal contact	1.E-05	5.E-02	2.E-06	9.E-03
	DePue Lake surface water (Eastern portion of lake)	Ingestion, dermal contact	0.E+00	9.E-03	0.E+00	4.E-03
	Groundwater seep sediment (Floodplain Area 1A)	Ingestion, dermal contact	5.E-07	1.E-02	9.E-08	2.E-03
	Groundwater seep surface water (Floodplain Area 1A)	Ingestion, dermal contact	0.E+00	5.E-03	0.E+00	2.E-03
	Floodplain surface soil (Floodplain Area 1A)	Ingestion, dermal contact	N/A	N/A	N/A	N/A
	Fish Fillets (Lake-wide)	Ingestion	NA [a]	NA [a]	NA [a]	NA [a]
		TOTAL:	**1.E-05**	**7.E-02**	**2.E-06**	**2.E-02**

Table 10

Summary of Receptor-Specific Risks and Hazards

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Receptor	Exposure Media	Exposure Route	RME Cancer Risks	RME Non-Cancer Hazards	CTE Cancer Risks	CTE Non-Cancer Hazards
Shoreline Angler, Adult + Child	DePue Lake surficial sediment (Sediment Area 1A)	Ingestion, dermal contact	1.E-05	--	2.E-06	--
	DePue Lake surface water (Eastern portion of lake)	Ingestion, dermal contact	0.E+00	--	0.E+00	--
	Groundwater seep sediment (Floodplain Area 1A)	Ingestion, dermal contact	7.E-07	--	1.E-07	--
	Groundwater seep surface water (Floodplain Area 1A)	Ingestion, dermal contact	0.E+00	--	0.E+00	--
	Floodplain surface soil (Floodplain Area 1A)	Ingestion, dermal contact	N/A	--	N/A	--
	Fish Fillets (Lake-wide)	Ingestion	NA [a]	--	NA [a]	--
		TOTAL:	**1.E-05**	--	**2.E-06**	--
Village Park Maintenance Worker, Adult	Floodplain surface soil (Floodplain Area 1A)	Ingestion, dermal contact	N/A	N/A	N/A	N/A
	DePue Lake surface and subsurface sediment (Sediment Area 1A)	Ingestion, dermal contact	1.E-06	7.E-03	1.E-07	2.E-03
	DePue Lake surface water (Eastern portion of lake)	Ingestion, dermal contact	0.E+00	2.E-03	0.E+00	1.E-03
	Groundwater seep sediment (Floodplain Area 1A)	Ingestion, dermal contact	2.E-07	2.E-03	2.E-08	4.E-04
	Groundwater seep surface water (Floodplain Area 1A)	Ingestion, dermal contact	0.E+00	1.E-03	0.E+00	6.E-04
		TOTAL:	**1.E-06**	**1.E-02**	**1.E-07**	**4.E-03**

Table 10

Summary of Receptor-Specific Risks and Hazards

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Receptor	Exposure Media	Exposure Route	RME Cancer Risks	RME Non-Cancer Hazards	CTE Cancer Risks	CTE Non-Cancer Hazards
Utility Maintenance Worker, Adult	Floodplain surface and subsurface soil (Floodplain Area 1A)	Ingestion, dermal contact	N/A	N/A	N/A	N/A
	Floodplain surface and subsurface soil (Floodplain Area 1B + WWTP Transect LL-5)	Ingestion, dermal contact	6.E-06	1.E-01	3.E-07	2.E-02
	DePue Lake surface and subsurface sediment (Sediment Area 1B)	Ingestion, dermal contact	2.E-07	2.E-02	2.E-08	4.E-03
	DePue Lake surface water (Eastern portion of lake)	Ingestion, dermal contact	0.E+00	4.E-04	0.E+00	2.E-04
	Groundwater seep sediment (Floodplain Area 1B)	Ingestion, dermal contact	2.E-07	2.E-02	2.E-08	6.E-03
	Groundwater seep surface water (Floodplain Area 1B)	Ingestion, dermal contact	0.E+00	6.E-04	0.E+00	3.E-04
		TOTAL:	**6.E-06**	**2.E-01**	**4.E-07**	**3.E-02**
Wildlife Workers and Hunters, Adult	Floodplain surface and subsurface soil (Floodplain Area 2)	Ingestion, dermal contact	8.E-07	2.E-02	2.E-07	2.E-02
	DePue Lake surface and subsurface sediment (Sediment Area 2)	Ingestion, dermal contact	7.E-07	1.E-02	9.E-08	4.E-03
	DePue Lake surface water (Lake-wide)	Ingestion, dermal contact	0.E+00	6.E-03	0.E+00	4.E-03
		TOTAL:	**2.E-06**	**4.E-02**	**3.E-07**	**2.E-02**

Table 10

Summary of Receptor-Specific Risks and Hazards

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Receptor	Exposure Media	Exposure Route	RME Cancer Risks	RME Non-Cancer Hazards	CTE Cancer Risks	CTE Non-Cancer Hazards
Farmer, Adult	Floodplain surface and subsurface soil (agricultural area within peninsula)	Ingestion, dermal contact, inhalation	**9.E-07**	**5.E-03**	**4.E-08**	**7.E-04**
Lake-Wide Recreational User, Adult	DePue Lake surficial sediment (Lake-wide)	Ingestion, dermal contact	3.E-05	2.E-01	2.E-06	3.E-02
	DePue Lake surface water (Lake-wide)	Ingestion, dermal contact	0.E+00	3.E-02	0.E+00	2.E-02
		TOTAL:	**3.E-05**	**2.E-01**	**2.E-06**	**5.E-02**
Lake-Wide Recreational User, Child	DePue Lake surficial sediment (Lake-wide)	Ingestion, dermal contact	5.E-05	1.E+00	9.E-06	2.E-01
	DePue Lake surface water (Lake-wide)	Ingestion, dermal contact	0.E+00	5.E-02	0.E+00	3.E-02
		TOTAL:	**5.E-05**	**1.E+00**	**9.E-06**	**3.E-01**
Lake-Wide Recreational User, Adult + Child	DePue Lake surficial sediment (Lake-wide)	Ingestion, dermal contact	7.E-05	--	1.E-05	--
	DePue Lake surface water (Lake-wide)	Ingestion, dermal contact	0.E+00	--	0.E+00	--
		TOTAL:	**7.E-05**	**--**	**1.E-05**	**--**

Notes:
[a] Lead was the only COPC for fish fillet tissue. Lead concentrations in fish are evaluated using the ALM and IEUBK models.
-- = Non-cancer hazards are evaluated separately for adults and children.
NA = Not available; N/A = Not applicable

5.4 Lead Modeling Results

In both the ALM and IEUBK Models, potential health risks associated with lead exposure are evaluated by comparing the estimated PbB to the current USEPA target PbB of 10 µg/dL (CDC 1991). Specifically, lead risk is evaluated based on the probability (i.e., P10 statistic) that PbB among a receptor population will exceed 10 µg/dL. Consistent with USEPA guidance (USEPA 2003a, 2007a), this lead evaluation focuses on determining if P10 equals or exceeds 5 percent, which is equivalent to calculating the 95th percentile of the probability distribution of PbB among a receptor population.

5.4.1 ALM Results

Lead risks for the adolescent trespasser, adult Village Park recreational user, adult shoreline angler, adult boat angler, adult boater, utility maintenance worker, and Village Park maintenance worker were evaluated using the ALM as discussed in Section 2.5. Tables D-7 through D-10 in Appendix D presents the calculated geometric means of blood lead levels for these receptors. For soil, the PbBs for all receptors exposed to soil were less than or equal to 1 µg/dL (i.e., adolescent trespassers exposed to surface soils in Floodplain Areas 1B, 1C, and 2, and utility maintenance workers exposed to surface and subsurface soils in Floodplain Area 1B; Table D-7). Similarly, for sediment and surface water, the calculated geometric means of blood lead levels were less than 1 µg/dL for all receptors exposed to DePue Lake sediment and groundwater seep sediment, which included shoreline anglers, boat anglers, adolescent trespassers, boater, utility maintenance workers, Village Park maintenance workers, and Village Park recreational users (Tables D-8 and D-9). Likewise, the calculated geometric means of blood lead levels for shoreline anglers and boat anglers exposed to lead in fish fillets via consumption were 0.1 µg/dL (Table D-10). Table D-11 presents the P10 statistics for each receptor, all of which were below the benchmark of 5 percent. The following is a summary of the P10 statistics for each receptor:

- Adolescent trespasser exposed to surface soil in Floodplain Area 1B and groundwater seep sediment and surface water in Floodplain Area 1B – 0.2 percent

- Adolescent trespasser exposed to surface soil in Floodplain Area 1C and groundwater seep surface water in Floodplain Area 1C – 0.009 percent

- Adolescent trespasser exposed to surface soil in Floodplain Area 2 – 0.005 percent

- Utility maintenance worker exposed to surface and subsurface soil in Floodplain Area 1B and groundwater seep sediment and surface water in Floodplain Area 1B – 0.9 percent

- Adult shoreline angler exposed to surficial sediment and surface water in Sediment Area 1 and lake-wide fish fillets – 0.004 percent

- Adult boat angler exposed to lake-wide sediment, surface water, and fish fillets – 0.004 percent

- Adult boater exposed to lake-wide sediment and surface water – 0.004 percent

- Village Park maintenance worker exposed to surficial and subsurface sediment and surface water in Sediment Area 1A – 0.004 percent

- Adult Village Park recreational user exposed to surficial sediment and surface water in Sediment Area 1A – 0.004 percent

Based on the results of the ALM modeling, lead concentrations in OU5 soil, sediment, surface water, and fish fillet tissue do not present a human health risk.

5.4.2 IEUBK Results

Lead risks for the child shoreline angler, child boat angler, child boater, and child Village Park recreational user were evaluated using the IEUBK Model, as discussed in Section 2.5. Tables D-5 and D-6 in Appendix D present the results of this modeling. Because the child boater and child boat angler had the same exposure parameters for sediment and surface water (with the exception of fish fillet consumption, which was only a pathway for the boat angler), these two receptors were evaluated as one group. Likewise, the child shoreline angler and child Village Park recreational user had the same exposure parameters for sediment and surface water (with the exception of fish fillet consumption, which was only a pathway for the shoreline angler) and were evaluated as one group. As shown on the probability distribution curve on Table D-5 (Appendix D), the P10 statistic for the child boater and child boat angler is significantly less than USEPA's target of 5 percent (P10 = 0.2%). Estimated PbBs for this group of receptors range from 1.8 to 3.2 µg/dL (Table D-5). Likewise, the P10 statistic for the child shoreline angler and child Village Park recreational user is significantly less than USEPA's target of 5 percent (P10 = 0.001%) as shown on the probability distribution curve in Table D-6 (Appendix D). Estimated PbBs for this group of receptors range from 1.0 to 1.5 µg/dL (Table D-6).

Based on the results of the IEUBK modeling, lead concentrations in OU5 soil, sediment, surface water, and fish fillet tissue do not present a human health risk.

6. Uncertainty Analysis

There are various sources of uncertainty inherent in the risk assessment process. These sources include uncertainties associated with screening criteria used to select COPCs, estimates of EPCs, and selection of exposure parameters and toxicity factors, for which conservative assumptions are typically used so as not to underestimate risk. The objective of an uncertainty analysis is to present key information regarding assumptions and uncertainties in the risk assessment process to place the quantitative risk estimates in proper perspective (USEPA 1989).

6.1 Screening Criteria

At the direction of IEPA, multiple sources of screening criteria (e.g., USEPA RSLs, TACO Remediation Objectives) were used in the COPC screening process. Maximum site concentrations were compared to the most conservative screening criteria available to identify COPCs that were subsequently included in the quantitative evaluation of potential cancer risks and non-cancer hazards. Some of these criteria (e.g., residential soil RSLs) are based on conservative exposure factors and exposure routes (e.g., ingestion, dermal contact, and/or inhalation) that may not necessarily reflect potential exposures of on-site receptors. Additionally, soils data were compared to TACO remediation objectives for the soil component of the groundwater ingestion exposure route. At the request of IEPA, constituents whose maximum concentration exceeded the soil-to-groundwater objectives were retained as soil COPCs. As shown in Table 2.28, several constituents were retained as soil COPCs solely based on their exceedance of soil-to-groundwater criteria (i.e., maximum concentrations were below direct contact soil criteria). While these constituents were not identified as risk drivers for soil, the addition of these chemicals in the overall risk calculations contributes to the resulting risk and hazard numbers.

6.2 Exposure Point Concentrations

The EPC term should ideally represent the average exposure contacted by an individual over an exposure area during a period of time (USEPA 2009c). USEPA (2002d) guidance states that the most appropriate EPC estimate is to be based on a 95% UCL on the mean. USEPA's promulgated software, ProUCL, was used to generate UCLs for datasets with sufficient data (i.e., at least 8 samples and 5 detections). The 95% UCL is meant to be a conservative estimate on the mean concentration within the exposure area. In some instances, the ProUCL software recommended a UCL based on the 97.5th or 99th UCL because the dataset was non-parametric (i.e., did not follow a normal or lognormal distribution). This adds a layer of conservatism to the EPC estimate.

In cases where datasets were not large enough to facilitate the calculation of a UCL (i.e., less than five detections), the maximum detected concentration was used as the EPC. The use of maximum values as EPCs may underestimate or overestimate the resulting risks and/or hazards. For example, if the dataset is small because only a few samples were collected in a particular area, and there is a high variability in the analytical results, then the maximum many not be conservative. In other instances, where more samples were collected, but many of the results were non-detect, the maximum may substantially overestimate the exposure. For example, the ProUCL User's Guide (USEPA 2010b) indicates that when datasets are limited due to the presence of non-detects, that the maximum observed value should not be used as the EPC, and that measures such as the median or mode present better estimates (with less uncertainty) of the population measure. If outliers are present in the dataset, and the outliers significantly skew the data, then the calculated UCL may exceed the maximum. In these cases, it is important to calculate the EPC both with and without outliers.

While there may be uncertainties associated with EPCs derived from small datasets and the use of maximum detected concentrations as EPCs, it is more likely that the maximum detected concentrations used as the EPCs overestimate, rather than underestimate, the true mean concentrations in these areas. For these reasons, when reliable 95% UCLs could not be calculated or exceeded the maximum detected concentration, the maximum detected concentrations were the most appropriate values to use as EPCs because they are adequately protective of human health and based on the systematic sampling design, are unlikely to overestimate potential exposures and risks.

For metals, it is important to note that because the areas most expected to be impacted within OU5 were sampled and analyzed, it is unlikely that substantially higher contaminant concentrations were missed. DePue Lake sediments and floodplain soils were sampled using a systematic approach that included the collection of soil samples along transects distributed throughout the floodplain, with proportionally more transects located in the vicinity of possible source areas (e.g., South Ditch and former Division Street outfall). Sediment sampling was conducted using a grid pattern, with a denser (more refined) grid along the northeast shoreline adjacent to possible source areas. This sampling approach and the bias towards expected source areas, makes it unlikely that any hotspots were missed and therefore, the available data should conservatively reflect potential metal exposures at the site.

The calculated EPCs were used to estimate potential risks and hazards under both a RME and CTE scenario.

As discussed in Section 2.4, EPCs for datasets with identified outliers were calculated two ways: first using all the data and secondly without outlier concentrations. Identified outliers included arsenic in several floodplain soil and DePue Lake sediment samples, and benzo(a)pyrene, dibenz(a,h)anthracene, and cadmium concentrations in several DePue Lake sediment samples (see Table C-1 in Appendix C). EPCs presented in Tables 3.1 through 3.27 of this HHRA are based on all analytical data, although potential risks and hazards based on EPCs calculated without outliers are presented in the Risk Characterization (Section 5) to help place potential risks and hazards into perspective.

6.3 Outlier Analysis

Outliers are measurements that are extremely large or small relative to the rest of the analytical data. An outlier may represent a true extreme value from a highly variable dataset, or it may represent an erroneous measurement. An outlier analysis was conducted as part of this HHRA in an effort to determine if individual chemical concentrations in a particular environmental medium were representative of the same population.

As indicated in Section 2.4, several outliers were identified in floodplain soil and DePue Lake sediment. Risks and hazards were calculated two ways: first with all data, and then with the outliers excluded (see Section 5, Risk Characterization). For many scenarios, risk and hazard estimates were lower when outliers were excluded, sometimes by as much as an order of magnitude. These results indicate that in some instances only a handful of samples representing a relatively small area are driving overall site risks. For some exposure areas and media (e.g., surficial sediment from Sediment Area 1A), an outlier analysis could not be conducted for PAHs due to limited sample sizes.

However, some PAHs were identified as statistical outliers in the site-wide outlier analysis conducted for the RI. PAHs (e.g., benzo[a]pyrene and dibenz[a,h]anthracene) were identified as risk drivers for several scenarios, and the inclusion of these outlier concentrations in the EPC calculations results in increased cancer risks. Overall, PAH concentrations in sediment sample SD-E were significantly higher than any other sediment samples within the lake and these outlier concentrations had a significant impact on the cancer risk estimates for lake-wide sediments and exposure scenarios related to Sediment Area 1A. If the one outlier from sample location SD-E in DePue Lake were removed from the dataset, the mean benzo(a)pyrene concentration in DePue Lake surface sediments would be lower than the mean benzo(a)pyrene concentration in Goose Lake surface sediments.

6.4 Consideration of Background Concentrations

The USEPA (2002a) guidance on the use of background data in risk assessments indicates that, under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) program, cleanup levels are generally not set below natural or anthropogenic background concentrations. Cancer risks for all receptors were less than or within USEPA's target risk range of 1×10^{-6} to 1×10^{-4}. Likewise, non-cancer hazards for all receptors were less than USEPA's and IEPA's target of 1.

Arsenic was the only COPC identified for groundwater seep sediment from Floodplain Area 1A. Potential risks associated with exposure to arsenic in groundwater seep sediment from Floodplain Area 1A under an RME scenario were less than 1×10^{-6} for all receptors (i.e., Village Park recreational user, boater, shoreline angler, and Village Park maintenance worker), with the exception of the boat angler (cancer risk for combined adult + child = 1×10^{-6}). Potential risks associated with exposure to arsenic in groundwater seep sediment from Floodplain Area 1A under a CTE scenario were less than 1×10^{-6} for all receptors. It is important to note that background arsenic concentrations in surficial sediment samples collected from Goose Lake were similar to concentrations observed in groundwater seep sediment samples collected from Floodplain Area 1A. Specifically, arsenic was detected in all 12 surficial sediment samples collected from Goose Lake, and concentrations ranged from 4.9 to 7.3 mg/kg, with an average of 6.2 mg/kg. Arsenic concentrations in groundwater seep sediment samples collected from Floodplain Area 1A ranged from 2.4 to 9.6 mg/kg, with an average of 5.9 mg/kg, which is lower than the average for Goose Lake.

Arsenic had the highest cancer risk for exposure of wildlife workers and hunters to surficial and subsurface sediments in Sediment Area 2 in DePue Lake, but arsenic risks were still less than 1×10^{-6} (RME cancer risk = 5×10^{-7}; CTE cancer risk = 7×10^{-8}). Arsenic concentrations in surficial and subsurface sediment samples collected from Sediment Area 2 in DePue Lake (1.5 to 17.3 mg/kg, with an average of 8.7 mg/kg) were similar to background arsenic concentrations in surficial and subsurface sediments collected from Goose Lake (4.9 to 11.1 mg/kg, with an average of 8.3 mg/kg). Arsenic also had the highest cancer risk for exposure of wildlife workers and hunters to surface and subsurface floodplain soils in Floodplain Area 2, although arsenic risks were still less than or equal to 1×10^{-6} (RME cancer risk = 7×10^{-7}; CTE cancer risk = 2×10^{-7}). Arsenic concentrations in DePue Lake floodplain soils from Floodplain Area 2 (4.2 to 28.2 mg/kg, with an average of 9.7 mg/kg) were similar to background concentrations in Goose Lake surface and subsurface floodplain soils (3.9 to 21.5 mg/kg, with an average of 8.6 mg/kg).

For the adolescent trespasser exposed to surface soils in Floodplain Area 2, arsenic had the highest cancer risk, although arsenic risks were still less than 1×10^{-6} (RME

cancer risk = 3 x 10^{-7}; CTE cancer risk = 6 x 10^{-8}). Arsenic concentrations in surface soil from Floodplain Area 2 (4.2 to 28.2 mg/kg, with an average of 8.7 mg/kg) were similar to arsenic concentrations in Goose Lake surface soils (4.1 to 22 mg/kg, with an average of 8.7 mg/kg).

Based on the above information, arsenic concentrations in several subareas of the site were comparable to concentrations observed in the background location (i.e., Goose Lake).Additionally, the IEPA lists the state-wide background arsenic concentration for soil applicable to Bureau County as 11.3 mg/kg (Title 35, Part 742, Appendix A, Table G), which is similar to or higher than many of the average arsenic concentrations calculated for various subareas in sediments and soils observed at DePue Lake and its floodplains.

6.5 Exposure Factors

Many of the exposure factors used in the HHRA are USEPA default values and as such, provide a conservative estimate of potential risks and hazards. Site-specific factors were used to reflect current conditions at the site, as appropriate. The objective of the HHRA interim deliverable (outlined previously in Section 1.1) was to obtain IEPA approval on the use of certain exposure factors prior to the submittal of the baseline HHRA. Some exposure factors are based on actual studies while others are based on experimental or modeled data. For the latter, these exposure factors (e.g., absorption fractions used to evaluate dermal exposures to soil and/or sediment) may not accurately reflect “real-life” conditions and could lead to overestimation or underestimation of risks and hazards. Likewise, default USEPA exposure factors (e.g., exposed skin surface areas used to evaluate dermal exposures to soil and/or sediment) may not accurately reflect site-specific conditions and could also lead to the overestimation or underestimation of risks and hazards.

The following subsections briefly discuss those factors that have the highest influence on resulting risks and hazards.

6.5.1 Soil and Sediment Ingestion Rates

Because studies of dermal exposure to sediments (usually a precursor to incidental ingestion) are limited, USEPA has not developed exposure factor recommendations specifically for sediment. Instead, it recommends using the same risk assessment approach for sediments as that for soil. Therefore, soil ingestion rates were used to quantify potential sediment exposures for adolescent trespassers and wildlife workers and hunters, although incidental ingestion of sediment would likely be significantly less than for soil. Specifically, USEPA (2004) states that “sediments which are consistently covered by considerable amounts of water are likely to wash off before the individual

reaches the shore"; therefore, incidental ingestion of sediments would likely be mitigated by the presence of overlying surface water.

For utility maintenance workers exposed to soil, the USEPA (2002b) upper-bound default value of 330 mg/day was used for the RME scenario at the request of IEPA. The ingestion rate of 330 mg/day is based on a study by Stanek et al. (1997) and represents the 95th percentile of that study. However, the ingestion rate of 330 mg/day has uncertainties because this study was affected by one individual who had an extremely high soil ingestion rate of 2 grams for the first day of the study week (Calabrese 2003), which resulted in an inflated upper bound estimate of the 95th percentile.

For child receptors (e.g., Village Park recreational user, lake-wide recreational user, boater, boat angler, and shoreline angler), an upper-bound soil ingestion rate of 200 mg/day from USEPA's (1997a) EFH was used to evaluate potential sediment exposures. This rate was recommended based on tracer studies conducted by Calabrese and his coworkers (Calabrese et al. 1989; Stanek and Calabrese 1995a, 1995b), which were available at the time that USEPA's EFH was finalized. However, since that time, updated studies have been conducted by the same authors using improved methodologies (Stanek et al. 1999; Stanek and Calabrese 2000; Calabrese 2003). These improvements included a larger number of study subjects (n = 64), improved particle size measurements that focused on smaller particles, a longer study duration (365 days) which allowed the authors to evaluate both short- and long-term soil ingestion rates, a relevant age group (1 to 4 year olds), use of a random population sample, and better control for input/output error. These authors reported a long-term 95th percentile soil ingestion rate of 106 mg/day when evaluated over the 365-day study period. The arithmetic mean ingestion rate for these children during that period was 31 mg/day, and the median ingestion rate was 17 mg/day. Thus, the rates provided by these authors indicate that the recommended soil ingestion rate of 200 mg/day is likely to overestimate long-term exposure to small children as a result of soil ingestion; therefore, using this ingestion rate for sediment is very conservative.

Sediment ingestion rates of 100 mg/day and 50 mg/day were used for the RME and CTE worker scenarios, respectively. Use of higher sediment ingestion rates for the worker scenarios would result in higher risks and hazards. However, risks associated with exposure of utility and maintenance workers to lake and groundwater seep sediments were less than or equal to 1 x 10^{-6}. Increasing the sediment ingestion rates would cause direct 1-to-1 increases in risks and hazards (e.g., increase from 50 mg/day to 100 mg/day would result in risks that are two-fold higher). However, because risks are low to begin with, risks using higher sediment ingestion rates would still be within or below USEPA targets.

6.5.2 Fish Ingestion Rates

Originally, the fish ingestion rates from an unpublished Maine study (Ebert et al. 1993) were proposed for use in the HHRA, but IEPA did not feel these ingestion rates were regionally relevant for DePue Lake. Subsequently, IEPA recommended the use of fish ingestion rates for recreational freshwater anglers from USEPA's (1997a) EFH or fish ingestion rates presented in several Midwestern studies (e.g., West et al. 1993, Williams et al. 2000). While these latter two studies are more regionally relevant than the Maine angler survey, the methodology used for them does not result in reliable estimates of long-term consumption. There are several uncertainties associated with the West et al. (1993) and Williams et al. (2000) fish consumption studies and those studies used in the derivation of USEPA's (1997a) recommended values. Specifically, the West et al. (1989; 1993) studies are based on short-term survey data and include consumption of fish obtained from commercial sources. Further, the majority of the data in USEPA's "key" studies include consumption from the Great Lakes, which support much more abundant and diverse fisheries than that found in DePue Lake. In addition, while the Williams et al. (2000) study provides specific information about Indiana anglers, it did not collect information about longer-term consumption, as individuals were only asked about their activity for a 3-month period. However, as requested by IEPA, the recommended fish ingestion rates from USEPA's (1997a) EFH (mean of 8 grams/day and 95th percentile of 25 grams/day) were proposed for use in this HHRA because these rates represent averages of key freshwater studies. Because these averages still include data from the two West et al. studies as well as the Ebert et al. (1993) and Connelly et al. (1992) studies, it is likely that they overestimate potential consumption of sport-caught fish from the much more limited fishery at DePue Lake. Because lead was the only COPC identified for fish fillets, and there are no toxicity values (i.e., RfDs and SFs) for ingestion of lead, traditional risk calculations were not conducted for fish consumption in this HHRA. As discussed in Section 2.5.3, lead in fish was evaluated using appropriate lead models.

6.5.3 Exposure Frequencies

Exposure assumptions for scenarios involving Village Park recreational users and DePue Lake anglers are conservative, and may overestimate actual use of site resources. Specifically, the RME exposure frequency used for the angler groups (i.e., boat angler and shoreline angler) at the request of IEPA was 50 days per year, which represents 2.5 times the average angler frequency for Illinois anglers (USFWS 2008). However, it is possible that anglers may be using DePue Lake on a less frequent basis and further, may also be frequenting other waterbodies in the region. Likewise, the RME exposure frequency used for the Village Park recreational user (adults and children) (EF = 56 days per year) assumes that these receptors would be exposed to sediment and surface water near the park two days per week from April through

October. This assumption represents a high-end exposure given that the climate in Illinois may not be conducive to outdoor seasonal activities for that entire period of time. Given that these exposure frequencies are conservative and may overestimate actual exposures, associated risks and hazards for these receptor groups may also be overestimated.

It should be noted that the calculated risks and hazards for certain receptors in OU-5 are only partial risk estimates for receptors that are potentially exposed to contaminated media in other OUs (e.g., OU4). For example, the Village Park recreational user, shoreline angler, Village Park maintenance worker, and utility maintenance worker may be exposed to environmental media associated with OU4. These potential additional exposures will be addressed as part of OU4, as stated previously. However, the OU5 HHRA is sufficiently complete to make risk management decisions for DePue Lake. Furthermore, risk management decisions for DePue Lake would not likely be driven by risks to the Village Park recreational user, shoreline angler, Village Park maintenance worker, or utility maintenance worker.

6.5.4 Area Use Factors

For some scenarios, on-site media were assumed to represent 100 percent of potential exposure (i.e., FI = 1), which may be conservative given that recreational-type receptors (e.g., park users, boaters, anglers) may frequent other attractive areas within the region rather than just DePue Lake. Using these exposure parameters to estimate potential risk is a conservative approach, indicating risks are unlikely to be higher and may actually be lower than the risk estimates presented in this HHRA.

6.6 Toxicity Factors

As indicated in Section 4, the toxicity factors used in the quantitative evaluation of potential risks and hazards (e.g., RfDs, SFs) were primarily selected from IRIS. Secondary sources included PPRTVs, ATSDR MRLs, and HEAST. For many chemicals, there is a lack of appropriate information on effects in humans (i.e., epidemiologic studies). Therefore, animal studies are generally used to develop toxicity values used in HHRAs.

Specifically, for non-cancer effects, toxicity values based on laboratory animal data are extrapolated with the use of uncertainty factors to account for factors such as: (1) variation in sensitivity among members of the human population (i.e., intraspecies variability), (2) the uncertainty in extrapolating animal data to humans (i.e., interspecies variability), (3) the uncertainty in extrapolating from less-than-lifetime data to lifetime exposure, (4) the uncertainty in extrapolating from a Lowest-Observed-Adverse-Effect-Level (LOAEL) rather than a No-Observed-Adverse-Effect-Level (NOAEL), and (5) the

uncertainty associated with extrapolation from animal data when the database is incomplete (USEPA 2002c).

A similar "margin of safety" is built into toxicity values for carcinogenic effects. Specifically, SFs are based on dose-response curves and their derivation includes the use of mathematical models to extrapolate from observed high dose data to the desired (but unmeasurable) slope at low dose (USEPA 2009g). In order to account for the uncertainty in this extrapolation process, USEPA typically chooses to employ the upper 95th confidence limit of the slope as the SF; therefore, there is a 95 percent probability that the true cancer potency is lower than the value chosen for the SF (USEPA 2009g). Based on the above information, the toxicity values used in this HHRA are considered to be conservative and may overestimate potential risks and hazards.

6.7 Bioavailability of Metals

As discussed in Section 3.3.1, the bioavailability of metals is especially important to consider in a risk assessment because metals can occur in a wide variety of chemical and physical forms, all of which are not readily absorbed when ingested (USEPA 2009d). Bioavailability of metals is specific to the metal salt and particulate size, the receptor and its specific pathophysiological characteristics, the exposure route, the exposure frequency and duration, the dose, and the exposure medium (USEPA 2007b). Metal salts are influenced by environmental factors such as pH, moisture, redox potential, organic matter, cation exchange capacity, and acid volatile sulfides (USEPA 2007b). USEPA (2007b) guidance states that "even a relatively small adjustment in oral bioavailability can have significant impacts on estimated risks." As stated previously, the quantitative evaluation of potential risks and hazards in this HHRA assumes that the bioavailability of all metals, except arsenic, is 100% in all exposure media (e.g., soil, sediment). The assumption of 100% bioavailability for all metals likely results in overestimated risks and hazards for the site.

One particular metal with limited bioavailability is arsenic. Studies of the bioavailability of arsenic suggest that absorption of arsenic in ingested soil is likely to be considerably lower than absorption of arsenic from ingested salts (ATSDR 2007). Estimates of the soluble, or bioaccessible, arsenic fraction have ranged from 3 to 50 percent for various soils and mining and smelter waste materials, and these estimates are similar to *in vivo* estimates of the relative bioavailability of arsenic in these same materials (ATSDR 2007). Consistent with recent USEPA (2012a, 2012b) guidance, an RBF of 60 percent was used in this HHRA to account for bioavailability of arsenic. However, without site-specific studies, an assumption of 60 percent bioavailability may overestimate potential risks and hazards due to arsenic in site media. Regardless, because cancer risks and non-cancer hazards in this HHRA (including those associated with arsenic) are within

or less than USEPA targets, a site-specific bioavailability study is not recommended at this time, but may be considered as part of the FS for the site; this approach is consistent with USEPA (2007b) guidance.

6.8 Use of Age-Dependent Adjustment Factors

As discussed in Section 4.2, default ADAFs were used in the HHRA to quantify potential carcinogenic risks for PAHs. The USEPA (2005) guidance indicates that chemical-specific data, if available, should be used to derive ADAFs. Data on benzo(a)pyrene are presented in USEPA's (2005) guidance. Specifically, Vesselinovitch et al. (1975) exposed mice to large single doses of benzo(a)pyrene by intraperitoneal injection at days 1, 15, and 42. Animals exposed on day 1 were obviously newborn animals. A mouse at day 15 is equivalent to a human at 11 months of age. The authors then compared the tumor response of these animals dosed early in life to animals dosed at day 42. They found that the tumor response for animals dosed at days 1 and 15 did not significantly differ, but both differed significantly from the tumor response in animals dosed at day 42. USEPA calculated the cancer potency factors for all of the animal groups, and the average ratio of the potency factors of the animals exposed early in life to those exposed later in life was 4.6. This ratio was lower, by roughly a factor of 2, than the default ratio of 10 developed by USEPA.

USEPA (2005) indicates that the acute dosing studies are valuable because they involve identical exposures with explicitly defined doses and time periods demonstrating that differential tumor incidences arise exclusively from age-dependent susceptibility. Therefore, these studies address both the period and magnitude of susceptibility. However, USEPA (2005) indicates that acute dosing studies involving intraperitoneal injection (like the Vesselinovitch study) may not be appropriate to derive ADAFs because they do not represent lifetime studies and do not reflect a typical route of exposure for environmental chemicals. For these reasons, IEPA recommended the use of default ADAFs in this HHRA.

Regarding the Vesselinovitch study, if the ADAF for 0 to <2 year old receptors were derived from both the 1 and 15-day old mice, that would result in an ADAF of 4.6. If the ADAF for 2 to <16 year old receptors were derived consistent with USEPA (2005) methodology, the resulting ADAF would be 2.1, which is half the difference between 1 and 4.6 on a logarithmic scale.

If chemical-specific ADAFs were used to quantify potential cancer risks for receptors exposed to benzo(a)pyrene and other carcinogenic PAHs in environmental media, the resulting carcinogenic risks would be approximately 50 percent less than those

estimated using default ADAFs. Therefore, it is possible that carcinogenic risks for PAHs may be overestimated in this HHRA.

6.9 Lead Modeling

The lead modeling (i.e., ALM and IEUBK) conducted for OU5 is based on current USEPA guidance and uses a target blood lead level (BLL) of concern of 10 µg/dL, which is based on potentially adverse neurological effects in children (CDC 1991). The CDC has recently recommended the use of a "reference value" of 5 µg/dL to identify children and environments associated with lead exposure hazards (CDC 2012a; 2012b). This reference value represents the 97.5th percentile of the BLL distribution among children 1 – 5 years old in the United States, and is based on data generated by the National Health and Nutrition Examination Survey (NHANES). However, USEPA has yet to respond to CDC's recent recommendations on the BLL and incorporate this value as part of its formal policy. Currently, the TACO Part 742 regulations indicate that soil remediation objectives (SROs) are based on the benchmark of 10 µg/dL (see note "y" for Table B in Appendix B that indicates the lead SROs for the commercial/industrial worker and construction worker are based on maintaining fetal blood lead below 10 µg/dL using USEPA's Adult Lead Model). Under the direction of IEPA, the current benchmark of 10 µg/dL was used in the risk assessment, to be consistent with current USEPA and TACO guidance.

6.10 Evaluation of Whole-Body Fish Consumption

As requested by IEPA, potential consumption of whole-body fish was evaluated for the site (i.e., DePue Lake) and the background location (i.e., Goose Lake). Although there are no available data to indicate whether consumption of whole-body fish may or may not be occurring, this exposure scenario was evaluated to address local concerns that specific populations within the Village of DePue could consume whole-body fish. The following evaluation of whole-body fish consumption is based on a hypothetical scenario, not a site-specific survey.

The following subsections discuss the analytical data, COPC screening, and resulting risks and hazards associated with the whole-body fish consumption scenario. Appendix G presents the tables associated with the whole-body fish evaluation.

6.10.1 Analytical Data

Resident fish were collected from three target areas within DePue Lake: 1) the eastern portion of the lake, 2) the central portion of the lake, and 3) the western portion of the lake (Figure 2-6). Whole-body fish were collected in support of the baseline ecological risk assessment (BERA). Fish species that were collected as whole-body samples

included freshwater drum, orange-spotted sunfish, bluegill, emerald shiner, and gizzard shad. These fish represent species and size ranges that may be consumed by ecological receptors (e.g., wading birds). Because these fish were collected in support of the BERA, the size ranges of these fish are smaller than typical edible-sized fish that would be expected to be consumed by humans. Nonetheless, these whole-body fish data were used in the evaluation of whole-body fish consumption by humans, with the following exceptions. Emerald shiners and gizzard shad were not included in this evaluation because these species would not typically be targeted by anglers. Specifically, emerald shiners represent a small minnow species and gizzard shad do not represent a fish species that could be caught with hook-and-line based on their feeding habits. Gizzard shad are also a very bony fish species with a generally unpalatable taste. Based on this information, emerald shiners and gizzard shad would not be species targeted by anglers and are not included in the whole-body fish evaluation.

A total of 15 whole-body fish samples from DePue Lake including freshwater drum, orange-spotted sunfish, and bluegill were collected and analyzed for TAL metals. A total of 5 whole-body fish samples from Goose Lake including freshwater drum and bluegill were collected and analyzed for TAL metals. These datasets are used to evaluate potential risks and hazards associated with consumption of whole-body fish. It should be noted that these fish data represent ungutted whole-body fish; however, it is expected that consumption of whole-body fish would generally not include internal organs. Because some metals can accumulate in organ tissue, the use of ungutted whole-body fish data is considered to be conservative. Additionally, it is possible that metals present in these whole-body fish samples are associated with sediment in the gastrointestinal tract rather than tissue.

Table G.1 in Appendix G presents the analytical data for whole-body fish from DePue Lake. Table G.3 in Appendix G presents the analytical data for whole-body fish from Goose Lake.

6.10.2 COPC Screening

To identify COPCs for the whole-body fish consumption pathway, data for DePue Lake and Goose Lake were compared to USEPA RSLs for fish tissue. Table G.1 (Appendix G) presents a point-by-point comparison of DePue Lake whole-body fish data to USEPA RSLs. Table G.2 (Appendix G) presents summary statistics for DePue Lake whole-body fish data and identifies COPCs, which were identified by comparing maximum detected concentrations to the USEPA RSLs for fish tissue. As shown in Table G.2, arsenic, cadmium, chromium, and lead were identified as COPCs for DePue Lake. Because these data were originally collected to support the BERA rather than the HHRA, the analytical detection limits achieved for antimony, chromium, cobalt

and thallium were higher than the USEPA RSLs for fish tissue for human health. Therefore, it cannot be determined from this data whether antimony, cobalt and thallium may be human health COPCs for whole-body fish, and the frequency of RSL exceedances cited for chromium may underestimate the frequency that would have resulted had detection limits lower than the RSL been available. Table G.3 (Appendix G) presents a point-by-point comparison of Goose Lake whole-body fish data to USEPA RSLs. Table G.4 (Appendix G) presents summary statistics for Goose Lake whole-body fish data and identifies COPCs. Arsenic, chromium, and lead were identified as COPCs for Goose Lake whole-body fish.

6.10.3 Quantification of Risks and Hazards

Both an RME and CTE scenario were evaluated for consumption of whole-body fish by a lake-wide angler (child and adult). The lake-wide angler represents an individual that fishes with hook and line at the site and consumes their catch.

For the RME scenario, EPCs used in the evaluation of potential risks and hazards, with the exception of lead (discussed in Section 6.9.4), represent 95% UCLs for datasets with more than 5 detections. For datasets with less than 5 detections, the maximum detected concentration was used as the EPC for the RME scenario. For the CTE scenario, EPCs represent 95% UCLs for datasets with more than 5 detections. For datasets with less than 5 detections, the median concentration was used as the EPC for the CTE scenario. The use of the median concentration as the EPC is consistent with ProUCL methodology (USEPA 2010b), which states that for datasets with low frequency of detection, measures such as the median represent better estimates (with lesser uncertainty) of the population measure of central tendency. Tables G.5.RME and G.5.CTE in Appendix G present the EPCs for DePue Lake under an RME and CTE scenario, respectively. Tables G.6.RME and G.6.CTE in Appendix G present the EPCs for Goose Lake under an RME and CTE scenario, respectively.

The exposure factors used to evaluate potential risks and hazards associated with consumption of whole-body fish are the same exposure factors used to quantify potential risks and hazards associated with consumption of fish fillets (see Sections 3.2.1.4 and 3.2.2.4 for RME and CTE exposure factors, respectively). It was assumed that all fish species were consumed at an equal rate, and therefore EPCs for whole-body fish include available data for freshwater drum, orange-spotted sunfish, and bluegill. The adult fish ingestion rate of 25 grams per day reflects the 95th percentile value for freshwater recreational anglers from USEPA's (1997a) EFH; this value was used in the HHRA as the RME fish ingestion rate at the request of the IEPA. The RME child fish ingestion rate was assumed to be half of this value (12.5 grams per day). The adult fish ingestion rate of 8 grams per day reflects the 50th percentile value for freshwater recreational anglers from USEPA's (1997a) EFH; this value was used as

the CTE fish ingestion rate in the HHRA at the request of the IEPA. The CTE child fish ingestion rate was assumed to be half of this value (4 grams per day). Table G.7 (Appendix G) presents the exposure factors used in the evaluation of whole-body fish consumption.

As discussed in Section 6.7, the bioavailability of metals is especially important to consider in a risk assessment because metals can occur in a wide variety of chemical and physical forms, all of which are not readily absorbed when ingested (USEPA 2009d). An adjustment factor of 20% was used for arsenic in the quantification of potential risks and hazards associated with whole-body fish consumption to account for the percentage of inorganic arsenic in fish tissue. This is consistent with scientific literature that supports that arsenic in fish is mainly in the form of organo-arsenic compounds (ATSDR 2007; USEPA 2007c).

Tables G.8 and G.9 in Appendix G present the non-cancer and cancer toxicity values, respectively, used to quantify potential risks and hazards. Toxicity values were taken from USEPA's IRIS database. Because lead does not have any associated toxicity values, lead modeling is used to quantify potential lead risks (discussed in Section 6.9.4 below).

As stated previously, potential risks and hazards were calculated for a lake-wide angler (child and adult) for both DePue Lake and Goose Lake. Tables G.10.RME through G.13.CTE presents the calculation of cancer risks and non-cancer hazards for child and adult anglers. The resulting risks and hazards are summarized below:

Receptor	DePue Lake				Goose Lake			
	RME Risk	CTE Risk	RME HI	CTE HI	RME Risk	CTE Risk	RME HI	CTE HI
Adult Angler	--	--	1	0.07	--	--	0.3	0.03
Child Angler	--	--	3	0.2	--	--	0.6	0.07
Adult + Child Angler	3E-05	3E-06	--	--	3E-05	3E-06	--	--

As shown, carcinogenic risks for consumption of whole-body fish from DePue Lake for the aggregate (adult + child) lake-wide angler are the same as those identified for Goose Lake (RME risk = 3E-05 and CTE risk = 3E-06). These carcinogenic risks are

within USEPA's target risk range of 1E-04 to 1E-06. Non-cancer hazards for the adult angler under both RME and CTE scenarios are equal to or less than 1 for DePue Lake and Goose Lake. For the child angler, non-cancer hazards for the RME scenario for DePue Lake are above USEPA's target HI of 1 (including the target-organ-specific HQ of 2 for cadmium effects on the kidney), and is due to the use of a maximum cadmium concentration that was used as the EPC (2.1 mg/kg). Of the 15 whole-body fish samples from DePue Lake included in the whole-body fish evaluation, there were only three detections of cadmium (0.105, 0.376, and 2.1 mg/kg). Based on an outlier analysis that was conducted for all species of whole-body fish tissue (i.e., freshwater drum, orange-spotted sunfish, bluegill, and gizzard shad), the cadmium concentration of 2.1 mg/kg in a freshwater drum sample was identified as an outlier (an outlier analysis could not be conducted for the dataset that omitted gizzard shad due to a large number of non-detects). The EPC used in the CTE scenario for the child angler at DePue Lake (0.376 mg/kg) resulted in a HI of 0.2, which is less than USEPA's threshold. Based on the number of non-detects in the cadmium dataset (20%), the median is likely a more realistic representation of site concentrations in whole-body fish tissue.

6.10.4 Lead Modeling

Because lead does not have associated toxicity values, the ALM and IEUBK were used to quantify potential lead risks for adult and child anglers, respectively. Both the ALM and IEUBK consider exposure through consumption of whole-body fish tissue and direct contact with lake-wide sediment and surface water. Table G.14 in Appendix G presents the ALM input parameters for whole-body fish tissue. The input parameters used for the whole-body fish evaluation are the same as those used to evaluate potential lead risks associated with consumption of fish fillets (see Section 2.5.1). Likewise, the ALM input parameters for sediment and surface water (Tables G.15 and G.16, respectively) are the same as those used in the modeling for boat anglers (see Section 2.5.1). Consistent with USEPA (2003a, 2007a, 2009e) guidance, the EPCs used in the ALM and IEUBK modeling represent arithmetic means.

Tables G.17, G.18, and G.19 (Appendix G) present the calculated geometric means of blood lead levels for exposure of adult lake-wide anglers to whole-body fish, sediment, and surface water, respectively. Table G.20 presents the P10 statistics for DePue Lake and Goose Lake anglers. For an adult lake-wide angler at DePue Lake, the combined P10 statistic for all exposure media is 0.04%, which is less than the CDC benchmark of 5%. Likewise, for an adult lake-wide angler at Goose Lake, the combined P10 statistic for all exposure media is 0.02%, which is less than the CDC benchmark of 5%.

Tables G.21 and G.22 (Appendix G) present the input parameters and modeling results for the IEUBK model, which evaluates potential lead risks for child lake-wide

anglers at DePue Lake and Goose Lake, respectively. The input parameters used in the IEUBK are the same as those used to evaluate potential lead risks associated with consumption of fish fillets (see Section 2.5.2). The resulting P10 statistic for child anglers at DePue Lake is 0.978%, which is less than the CDC benchmark of 5%. The resulting P10 statistic for child anglers at Goose Lake is 0.006%, which is less than the CDC benchmark of 5%.

In summary, potential lead risks associated with consumption of whole-body fish by lake-wide child and adult anglers at both DePue Lake and Goose Lake are less than the current CDC benchmark.

7. Summary and Conclusions

This baseline HHRA was conducted in accordance with the DePue Lake RI Work Plan (ARCADIS BBL 2006), and evaluates potential human health risks associated with OU5 at the DePue Superfund Site located in DePue, Illinois. The goal of this HHRA was to evaluate potential human health risks posed by site-related constituents in environmental media from OU5. This HHRA was conducted in accordance with relevant USEPA guidance, and involved the following four steps: 1) data evaluation, to identify site-related COPCs; 2) exposure assessment, to determine potential exposure pathways and quantify the magnitude of potential exposure; 3) toxicity assessment, to determine types of effects associated with exposures; and 4) risk characterization, to quantify cancer risks and non-cancer health hazards associated with specific exposures at OU5.

Both RME and CTE scenarios were evaluated in this HHRA. The RME scenario is intended to represent potential "high-end" exposures and the CTE scenario is intended to represent more "typical" exposures.

Results of the HHRA indicate that cancer risks for site soil, sediment, and surface water under a RME scenario were generally lower than or within USEPA's target risk range for Superfund sites (i.e., risk range of 1×10^{-4} to 1×10^{-6}). The highest RME cancer risk associated with the site was 7×10^{-5} for the lake-wide recreational user (adult + child) exposed to lake sediment and surface water under a swimming scenario. All exposure scenarios exhibited non-cancer hazards below USEPA's and IEPA's target of 1 under both RME and CTE scenarios. The highest HI (1) was observed for the child lake-wide recreational user exposed to lake sediment and surface water under an RME swimming scenario.

The highest CTE cancer risk associated with the site was 1×10^{-5} for the lake-wide recreational user (adult + child) exposed to lake-wide sediment and surface water under a swimming scenario. The other receptor groups with cancer risks above 1×10^{-6} were the adolescent trespasser exposed to media in Floodplain Area 1B (2×10^{-6}), the Village Park recreational user (adult + child risk, wading scenario = 3×10^{-6}; adult + child risk, swimming scenario = 4×10^{-6}), boater (adult + child risk = 2×10^{-6}), boat angler (adult + child risk = 3×10^{-6}), shoreline angler (adult + child risk = 2×10^{-6}); all other cancer risks under a CTE scenario were less than 1×10^{-6}. CTE non-cancer hazards for all receptor groups were less than 1.

It is important to note that exposure assumptions for scenarios involving Village Park recreational users, lake-wide recreational users, and DePue Lake anglers are the most conservative, and likely to overestimate use of site resources. Specifically, the RME

exposure frequency used for the angler groups (i.e., boat angler and shoreline angler) at the request of IEPA was 50 days per year, which represents 2.5 times the average angler frequency for Illinois anglers (USFWS 2008). In reality, anglers may be using DePue Lake on a less frequent basis and further, may also be frequenting other waterbodies in the region. Likewise, the RME exposure frequency used for Village Park recreational users and lake-wide recreational users (adults and children) (EF = 56 days per year) assumes that these receptors would be exposed to sediment and surface water for two days per week from April through October. This assumption may be overly conservative given that the climate in Illinois may not be conducive to outdoor seasonal activities for that entire period of time.

Arsenic was identified as the primary risk driver for floodplain soil. However, it is important to note that arsenic concentrations in floodplain soil from Floodplain Area 2 were similar to concentrations observed in Goose Lake floodplain soils as well as the state-wide background soil value. Arsenic, benzo(a)pyrene, and dibenz(a,h)anthracene were identified as the primary risk drivers for DePue Lake sediment and groundwater seep sediment. Although arsenic was identified as a risk driver in groundwater seep sediment from Floodplain Area 1A and DePue Lake sediment in Sediment Area 2, on-site arsenic concentrations in this medium were actually similar to arsenic concentrations in Goose Lake sediment as well as the state-wide background value for soil.

An outlier analysis was conducted as part of the HHRA to identify COPC concentrations that may not be representative of general site conditions. This analysis indicated that arsenic, benzo(a)pyrene, dibenz(a,h)anthracene, and cadmium concentrations in several samples may be statistical outliers; however, there is no reason to believe that these values are incorrect or invalid. OU5 is a heterogeneous area. The statistical outliers may be associated with historic source areas where site-related contaminants were discharged to the lake; they may represent hot spots; or they may simply be extreme values at the high end of the concentration ranges. Whatever the source of these values, they have the potential to distort the statistical calculation of 95% UCLs, which are used as EPCs in the quantitative evaluation of potential risks and hazards, and thereby add uncertainty to the risk assessment process. Therefore, to place site risk and hazard estimates into perspective, risks and hazards were quantified without outliers. Certain results indicated that the presence of outliers is responsible for driving site risks and that with their exclusion, risks and hazards are lower for most scenarios, sometimes by as much as an order of magnitude.

Based on the lead evaluation, lead concentrations in floodplain soil, DePue Lake sediment and surface water, groundwater seep sediment and surface water, and fish

fillet tissue do not present a risk (i.e., P10 statistics for all scenarios were less than the current USEPA threshold of 5 percent above a PbB of 10 µg/dL).

An evaluation of whole-body fish consumption was included in the uncertainty section. Evaluation of this pathway is limited because the whole-body fish tissue data were planned for use in the BERA only and there are no site-specific data to support the exposure parameters used in this evaluation. Given these limitations, the whole-body fish consumption evaluation did not show risk outside the USEPA target risk range. Likewise, lead concentrations in whole-body fish do not present a risk. Potential risks and hazards for other COPCs associated with consumption of whole-body fish are comparable for DePue Lake and Goose Lake with the exception of the RME HI for the DePue Lake child angler, which was above the USEPA target of 1 (cadmium HQ = 2). However, this elevated HQ was due to the use of the maximum cadmium concentration because of a limited number of cadmium detections in the dataset. The maximum cadmium concentration is an outlier. CTE hazards for the DePue Lake child angler using the median cadmium concentration and for Goose Lake are less than 1.

The evaluation of potential risks and hazards associated with exposure of Village Park recreational users, Village Park maintenance workers, utility maintenance workers, and shoreline anglers to environmental media in OU5 represent partial risk estimates because these receptors may also be exposed to soils associated with OU4 (i.e., soils near the Village Park that fall outside of the 450 ft amsl floodplain area). However, potential risks attributable to floodplain soils outside of OU5 will be addressed as part of OU4. The remedy at OU4 will be conservatively based on a residential scenario.

In summary, based on the exposure scenarios evaluated in this HHRA, results indicate that current and potential future exposures to site-related media result in carcinogenic risks and non-carcinogenic hazards that are within USEPA's target risk range and less than USEPA's target hazard index of 1.

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Table 0
Site Risk Assessment Identification Information
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Site Name/OU:	DePue Lake and Floodplains, Operable Unit 5 (OU5)
Region:	5
EPA ID Number:	ILD062340641
State:	Illinois
Status:	Fund Lead Remedial Investigation
Federal Facility (Y/N):	Y
Illinois EPA Project Manager:	Charlene Falco
Illinois EPA Risk Assessor:	Connie Sullinger
Prepared by (Organization):	ARCADIS
Prepared for (Organization):	DePue Group
Document Title:	OU5 Baseline Human Health Risk Assessment
Document Date:	June 2010; Revised August 2011; Revised March 2012; Revised September 2014
Probabilistic Risk Assessment (Y/N):	N
Comments:	

Table 1
Summary of Current and Potential Future Exposure Pathways
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Receptor Population [1]	Receptor Age	Exposure Medium [2]	Exposure Route	Exposure Area [3]	Rationale
Trespasser	Adolescent	Surface Soil	Dermal Ingestion	Floodplain Area 1B Floodplain Area 1C Floodplain Area 2 Floodplain Area 3	Trespassers may be exposed to surface soils during "recreational" activities.
		Seep Sediment/Seep Water	Dermal Ingestion	Floodplain Area 1B Floodplain Area 1C	Trespassers may be exposed to sediment and surface water associated with groundwater seeps along the north shore of the lake.
Village Park Recreational User [a]	Adult and Child	Surface Soil	Dermal Ingestion	Floodplain Area 1A	Recreational receptors may be exposed to surface soils during recreational activities at the Village Park.
		Surface Sediment	Dermal Ingestion	Sediment Area 1A	Recreational receptors may be exposed to near-shore sediments in DePue Lake during recreational activities at the Village Park (e.g., wading and/or swimming).
		Surface Water	Dermal Ingestion	Eastern Lake	Recreational receptors may be exposed to surface water in DePue Lake during recreational activities at the Village Park (e.g., wading and/or swimming).
		Seep Sediment/Seep Water	Dermal Ingestion	Floodplain Area 1A	Recreational receptors may be exposed to sediment and surface water associated with groundwater seeps near the Village Park during recreational activities.
Lake-Wide Recreational User [d]	Adult and Child	Surface Sediment	Dermal Ingestion	Lake-Wide	Recreational receptors may be exposed to sediments in DePue Lake during recreational activities (i.e., swimming).
		Surface Water	Dermal Ingestion	Lake-Wide	Recreational receptors may be exposed to surface water in DePue Lake during recreational activities (i.e., swimming).
Boater	Adult and Child	Surface Sediment	Dermal Ingestion	Lake-Wide	Boaters may be exposed to sediments in DePue Lake during recreational activities.
		Surface Water	Dermal Ingestion	Lake-Wide	Boaters may be exposed to surface water in DePue Lake during recreational activities.
		Seep Sediment/Seep Water	Dermal Ingestion	Floodplain Area 1A	Boaters may be exposed to sediment and surafce water associated with groundwater seeps during launching activities.
Angler (Boat)	Adult and Child	Fish	Ingestion	Lake-Wide [b]	Despite the consumption advisory, anglers may consume fish from DePue Lake.
		Surface Sediment	Dermal Ingestion	Lake-Wide	Anglers may be exposed to surficial sediments during fishing activities.
		Surface Water	Dermal Ingestion	Lake-Wide	Anglers may be exposed to surface water during fishing activities.
		Seep Sediment/Seep Water	Dermal Ingestion	Floodplain Area 1A	Anglers may be exposed to sediment and surafce water associated with groundwater seeps during boat launching activities.
Angler (Shoreline) [a]	Adult and Child	Surface Soil	Dermal Ingestion	Floodplain Area 1A	Anglers may be exposed to surface soils during fishing activities.
		Fish	Ingestion	Lake-Wide [b]	Despite the consumption advisory, anglers may consume fish from DePue Lake.
		Surface Sediment	Dermal Ingestion	Sediment Area 1A	Anglers may be exposed to near-shore surficial sediment during fishing activities.
		Surface Water	Dermal Ingestion	Eastern Lake	Anglers may be exposed to surface water during fishing activities.
		Seep Sediment/Seep Water	Dermal Ingestion	Floodplain Area 1A	Anglers may be exposed to sediment and surface water associated with groundwater seeps along the north shore of DePue Lake during fishing activities.

Table 1
Summary of Current and Potential Future Exposure Pathways
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Receptor Population [1]	Receptor Age	Exposure Medium [2]	Exposure Route	Exposure Area [3]	Rationale
Village Park Maintenance Worker [a]	Adult	Surface Soil	Dermal Ingestion	Floodplain Area 1A	Maintenance workers may be exposed to surface soils within the Village Park during maintenance activities.
		Surface and Subsurface Sediment	Dermal Ingestion	Sediment Area 1A	Maintenance workers may be exposed to near-shore sediment along the north shore of DePue Lake (adjacent to Village Park) during maintenance activities.
		Surface Water	Dermal Ingestion	Eastern Lake	Maintenance workers may be exposed to surface water along the north shore of DePue Lake (adjacent to Village Park) during maintenance activities.
		Seep Sediment/Seep Water	Dermal Ingestion	Floodplain Area 1A	Maintenance workers may be exposed to sediment and surface water associated with groundwater seeps along the north shore of DePue Lake (adjacent to Village Park) during maintenance activities.
Utility Maintenance Worker [a]	Adult	Surface and Subsurface Soil	Dermal Ingestion	Floodplain Area 1A Floodplain Area 1B WWTP Transect LL-5	Maintenance workers may be exposed to surface and subsurface soils along the north shore of DePue Lake (WWTP Outfall and Division Street Outfall) during maintenance activities.
		Surface and Subsurface Sediment	Dermal Ingestion	Sediment Area 1B	Maintenance workers may be exposed to near-shore sediment along the north shore of DePue Lake (WWTP Outfall and Division Street Outfall) during maintenance activities.
		Surface Water	Dermal Ingestion	Eastern Lake	Maintenance workers may be exposed to surface water along the north shore of DePue Lake (WWTP Outfall and Division Street Outfall) during maintenance activities.
		Seep Sediment/Seep Water	Dermal Ingestion	Floodplain Area 1B	Maintenance workers may be exposed to sediment and surface water associated with groundwater seeps along the north shore of DePue Lake (WWTP Outfall and Division Street Outfall) during maintenance activities.
Wildlife Workers and Hunters	Adult	Surface and Subsurface Soil	Dermal Ingestion	Floodplain Area 2	Wildlife workers may be exposed to surface and subsurface soils during installation of wood duck boxes and duck blinds. Hunters may be exposed to surface and subsurface soils during hunting activities.
		Surface and Subsurface Sediment	Dermal Ingestion	Sediment Area 2	Wildlife workers may be exposed to sediments during installation of wood duck boxes and duck blinds. Hunters may be exposed to sediments during hunting activities.
		Surface Water	Dermal Ingestion	Lake-Wide	Wildlife workers may be exposed to surface water during installation of wood duck boxes and duck blinds. Hunters may be exposed to surface water during hunting activities.
Farmer	Adult	Surface and Subsurface Soil	Dermal Ingestion Inhalation	Agricultural Area Within Floodplain Area 2/3	Farmers may be exposed to surface and subsurface soils during agricultural activities.[c]

Table 1
Summary of Current and Potential Future Exposure Pathways
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Notes:
This table identifies receptors, media, exposure pathways, and exposure areas that will be quantitatively evaluated in the human health risk assessment.
[1] Receptor definitions:
Child = Individual aged 0 - 6 years.
Adolescent trespasser = Individual aged 7 - 18 years.
Recreator = Individual involved in recreational activities such as picnicking, wading, and wildlife observation. Includes receptors that may utilize the lakeshore adjacent to Village Park.
Boater = Individual involved in boating activities on DePue Lake. Includes boaters involved in annual power boat racing.
Farmer = Individual involved in agricultural activities such as plowing crop fields.
Village Park Maintenance Worker = Individual who may be involved in maintenance work for facilities located along the north shore of DePue Lake adjacent to Village Park.
Utility Maintenance Worker = Individual who may be involved in maintenance work for facilities located along the north shore of DePue Lake (DePue WWTP Outfall and Division Street Outfall).
Wildlife Worker and Hunter = Individuals that may frequent the western and southern floodplain, including IDNR personnel involved in installation of wood duck boxes and maintenance of duck
[2] Media definitions:
Surface soils and sediment are defined as 0 - 0.5 feet deep.
Subsurface soils and sediment are defined as 0.5 - 2 feet deep.
[3] Floodplain Exposure Areas are defined on Figure 2-13 and Figure 2-14, and Sediment Exposure Areas are shown on Figure 2-15.
[a] Soils data were not collected near the Village Park because this area is technically outside of OU5 (i.e., above 450 ft amsl). Therefore, potential exposure to soil in the vicinity of the Village Park will be evaluated in the HHRA for OU4 (Off-Site Soils).
[b] It is assumed that fish will move freely between different areas of DePue Lake, and therefore, anglers may be equally exposed to fish that were collected in the eastern, central, and western portions of the lake.
[c] The home-grown produce exposure pathway was identified in the Work Plan as being a potentially complete exposure pathway. However, this pathway is not quantitatively evaluated based on current site-specific information (i.e., crops are used for livestock feed). However, additional consideration may be given to this pathway if site-specific information indicates this may be a potential future human exposure pathway.
[d] The lake-wide recreational user is assumed to be an individual who swims in the lake.

WWTP = Waste Water Treatment Plant

Table 2.1
Occurrence, Distribution, and Selection of Chemicals of Potential Concern
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Floodplain Surface Soil
Exposure Area: Floodplain Area 1B
Receptor: Trespasser
Receptor Age: Adolescent

Exposure Point	CAS Number	Chemical of Potential Concern	Units	Minimum Detect	Maximum Detect	Detection Frequency	Max Detect Location	Minimum Non-Detect RANGE		Maximum Non-Detect RANGE	Concentration used for Screening [1]	Background Value [2]	Screening Toxicity Value [3,4]	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Final COPC Flag (Y/N)	Rationale for Selection or Deletion [5]
Surface Soil		**SVOCs**															
	56-55-3	Benzo(a)anthracene	µg/kg	220	760	2/2	LL7-2	N/A	-	N/A	760	170	150	N/A	N/A	Y	ASTV
	50-32-8	Benzo(a)pyrene	µg/kg	260	950	2/2	LL7-2	N/A	-	N/A	950	170	15	N/A	N/A	Y	ASTV
	205-99-2	Benzo(b)fluoranthene	µg/kg	340	1200	2/2	LL7-2	N/A	-	N/A	1200	250	150	N/A	N/A	Y	ASTV
	191-24-2	Benzo(g,h,i)perylene	µg/kg	170	370	2/2	LL7-2	N/A	-	N/A	370	N/A	150	N/A	N/A	Y	ASTV
	207-08-9	Benzo(k)fluoranthene	µg/kg	250	900	2/2	LL7-2	N/A	-	N/A	900	200	1,500	N/A	N/A	Y	cPAH
	218-01-9	Chrysene	µg/kg	330	1300	2/2	LL7-2	N/A	-	N/A	1300	250	15,000	N/A	N/A	Y	cPAH
	53-70-3	Dibenz(a,h)anthracene	µg/kg	350	350	1/2	LL7-2	650	-	650	350	N/A	15	N/A	N/A	Y	ASTV
	206-44-0	Fluoranthene	µg/kg	560	1800	2/2	LL7-2	N/A	-	N/A	1800	200	2,300,000	N/A	N/A	N	BSTV
	193-39-5	Indeno(1,2,3-cd)pyrene	µg/kg	220	650	2/2	LL7-2	N/A	-	N/A	650	150	150	N/A	N/A	Y	ASTV
	85-01-8	Phenanthrene	µg/kg	240	1600	2/2	LL7-2	N/A	-	N/A	1600	N/A	383,333 [a]	N/A	N/A	N	BSTV
	129-00-0	Pyrene	µg/kg	440	1500	2/2	LL7-2	N/A	-	N/A	1500	250	283,333 [a]	N/A	N/A	N	BSTV
		PCBs															
	11097-69-1	Aroclor 1254	µg/kg	150	150	1/1	LL7-4	N/A	-	N/A	150	44	220	N/A	N/A	N	BSTV
		Pesticides															
	50-29-3	4,4'-DDT	µg/kg	10	10	1/2	LL7-2	6.5	-	6.5	10	N/A	1,700	N/A	N/A	N	BSTV
	60-57-1	Dieldrin	µg/kg	8.8	8.8	1/2	LL7-4	5.5	-	5.5	8.8	5.8	30	N/A	N/A	N	BSTV
	53494-70-5	Endrin ketone	µg/kg	6.4	6.4	1/2	LL7-2	6.5	-	6.5	6.4	N/A	18,000	N/A	N/A	N	BSTV
		TAL-Metals and Cyanide															
	7429-90-5	Aluminum	mg/kg	7480	13600	10/10	LL7-3	N/A	-	N/A	13600	19000	77,000	N/A	N/A	N	HYP
	7440-36-0	Antimony	mg/kg	0.78	5.8	3/8	LL7-2	11.6	-	19.6	5.8	N/A	10 [b]	N/A	N/A	N	BSTV
	7440-38-2	Arsenic	mg/kg	5.4	390	10/10	LL7-1	N/A	-	N/A	390	11	0.39	N/A	N/A	Y	ASTV
	7440-39-3	Barium	mg/kg	295	8000	10/10	LL7-1	N/A	-	N/A	8000	210	917 [a]	N/A	N/A	Y	ASTV
	7440-41-7	Beryllium	mg/kg	0.56	1	10/10	LL6-2	N/A	-	N/A	1	0.96	53 [c]	N/A	N/A	N	BSTV
	7440-43-9	Cadmium	mg/kg	37.4	2490	10/10	LL7-1	N/A	-	N/A	2490	3.3	70	N/A	N/A	Y	ASTV
	7440-70-2	Calcium	mg/kg	16500	94500	10/10	LL7-3	N/A	-	N/A	94500	40000	N/A	N/A	N/A	N	ENUT
	7440-47-3	Chromium	mg/kg	18.8	36.8	8/10	LL8-2	19	-	19.7	36.8	40	230	N/A	N/A	N	BSL
	7440-48-4	Cobalt	mg/kg	7.5	18.8	10/10	LL7-1	N/A	-	N/A	18.8	12	23	N/A	N/A	N	BSTV
	7440-50-8	Copper	mg/kg	146	2240	10/10	LL7-1	N/A	-	N/A	2240	52	2,900	N/A	N/A	N	BSTV
	57-12-5	Cyanide	mg/kg	0.94	2.6	2/2	LL7-2	N/A	-	N/A	2.6	0.87	1,600	N/A	N/A	N	BSTV
	7439-89-6	Iron	mg/kg	18000	50000	10/10	LL6-1	N/A	-	N/A	50000	32000	18333 [c]	N/A	N/A	Y	ASTV
	7439-92-1	Lead	mg/kg	105	12500	10/10	LL7-1	N/A	-	N/A	12500	44	400	N/A	N/A	Y	ASTV
	7439-95-4	Magnesium	mg/kg	3770	14700	10/10	LL7-3	N/A	-	N/A	14700	15000	N/A	N/A	N/A	N	ENUT
	7439-96-5	Manganese	mg/kg	363	1600	10/10	LL6-2	N/A	-	N/A	1600	930	1,600	N/A	N/A	Y	ASTV
	7439-97-6	Mercury	mg/kg	0.19	6.8	10/10	LL7-1	N/A	-	N/A	6.8	0.22	7.8	N/A	N/A	N	BSTV
	7440-02-0	Nickel	mg/kg	17	34.5	10/10	LL8-2	N/A	-	N/A	34.5	33	1,500	N/A	N/A	N	BSTV
	7440-09-7	Potassium	mg/kg	1080	2100	10/10	LL6-3	N/A	-	N/A	2100	2800	N/A	N/A	N/A	N	ENUT
	7782-49-2	Selenium	mg/kg	2.6	14.2	10/10	LL7-1	N/A	-	N/A	14.2	N/A	390	N/A	N/A	N	BSTV
	7440-22-4	Silver	mg/kg	0.58	68.7	10/10	LL7-1	N/A	-	N/A	68.7	1.7	390	N/A	N/A	N	BSTV
	7440-23-5	Sodium	mg/kg	779	4990	4/10	LL7-1	703	-	16000	4990	710	N/A	N/A	N/A	N	ENUT
	7440-28-0	Thallium	mg/kg	0.58	1.6	4/10	LL8-1	4.6	-	8.9	1.6	1.2	6.3	N/A	N/A	N	BSTV
	7440-62-2	Vanadium	mg/kg	22.4	35.4	10/10	LL7-3	N/A	-	N/A	35.4	40	390	N/A	N/A	N	BSTV
	7440-66-6	Zinc	mg/kg	3400	150000	10/10	LL7-1	N/A	-	N/A	150000	220	7667 [b]	N/A	N/A	Y	ASTV

Table 2.1
Occurrence, Distribution, and Selection of Chemicals of Potential Concern
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Floodplain Surface Soil
Exposure Area: Floodplain Area 1B
Receptor: Trespasser
Receptor Age: Adolescent

Notes:

[1] Maximum concentration was used as the screening concentration.
[2] Background values represent Upper Prediction Limits (UPLs) from Goose Lake data. When UPLs could not be calculated due to small sample size, maximum background values were used provided that the maximum concentration was not an outlier.
[3] Screening toxicity value represents the most conservative screening criteria from USEPA Regional Screening Levels, Soil Remediation Objectives from Tiered Approach to Corrective Action Objectives (TACO), or non-TACO or provisional soil remediation objectives.
[4] For original screening toxicity value prior to adjustment for Mixture Rule, refer to Appendix E tables.
[5] Rationale codes:
HYP = Excluded based on hypothesis testing, which indicated site concentrations are not significantly different than background concentrations.
BSL = Excluded based on comparison to background value.
ASTV = Retained because screening concentration is above screening toxicity value.
BSTV = Excluded because screening concentration is below screening toxicity value.
ENUT = Essential nutrient.
cPAH = Retained because constituent is a carcinogenic PAH greater than the background value.
[a] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Kidney; n = 6.
[b] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Circulatory System; n = 3.
[c] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Gastrointestinal System; n = 3.
Table contains detected constituents only.
ARAR/TBC = Applicable or Relevant and Appropriate Requirement / To Be Considered
COPC = Chemical of Potential Concern
SVOC = semivolatile organic compound
PCB = polychlorinated biphenyl
TAL = target analyte list
N/A = Not available
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram

Table 2.2
Occurrence, Distribution, and Selection of Chemicals of Potential Concern
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Floodplain Surface Soil to Groundwater
Exposure Area: Floodplain Area 1B
Receptor: Trespasser
Receptor Age: Adolescent

Exposure Point	CAS Number	Chemical of Potential Concern	Units	Minimum Detect	Maximum Detect	Detection Frequency	Max Detect Location	Minimum Non-Detect RANGE		Maximum Non-Detect	Concentration used for Screening [1]	Background Value [2]	Screening Toxicity Value [3,4]	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Final COPC Flag (Y/N)	Rationale for Selection or Deletion [5]
Surface Soil to Groundwater		**SVOCs**															
	56-55-3	Benzo(a)anthracene	µg/kg	220	760	2/2	LL7-2	N/A	-	N/A	760	170	2,000	N/A	N/A	N	BSTV
	50-32-8	Benzo(a)pyrene	µg/kg	260	950	2/2	LL7-2	N/A	-	N/A	950	170	8,000	N/A	N/A	N	BSTV
	205-99-2	Benzo(b)fluoranthene	µg/kg	340	1200	2/2	LL7-2	N/A	-	N/A	1200	250	5,000	N/A	N/A	N	BSTV
	191-24-2	Benzo(g,h,i)perylene	µg/kg	170	370	2/2	LL7-2	N/A	-	N/A	370	N/A	27,000,000	N/A	N/A	N	BSTV
	207-08-9	Benzo(k)fluoranthene	µg/kg	250	900	2/2	LL7-2	N/A	-	N/A	900	200	49,000	N/A	N/A	N	BSTV
	218-01-9	Chrysene	µg/kg	330	1300	2/2	LL7-2	N/A	-	N/A	1300	250	160,000	N/A	N/A	N	BSTV
	53-70-3	Dibenz(a,h)anthracene	µg/kg	350	350	1/2	LL7-2	650	-	650	350	N/A	2,000	N/A	N/A	N	BSTV
	206-44-0	Fluoranthene	µg/kg	560	1800	2/2	LL7-2	N/A	-	N/A	1800	200	59,722 [a,c,g]	N/A	N/A	N	BSTV
	193-39-5	Indeno(1,2,3-cd)pyrene	µg/kg	220	650	2/2	LL7-2	N/A	-	N/A	650	150	14,000	N/A	N/A	N	BSTV
	85-01-8	Phenanthrene	µg/kg	240	1600	2/2	LL7-2	N/A	-	N/A	1600	N/A	33,333 [a]	N/A	N/A	N	BSTV
	129-00-0	Pyrene	µg/kg	440	1500	2/2	LL7-2	N/A	-	N/A	1500	250	700,000 [a]	N/A	N/A	N	BSTV
		PCBs															
	11097-69-1	Aroclor 1254	µg/kg	150	150	1/1	LL7-4	N/A	-	N/A	150	44	8.8 [b]	N/A	N/A	Y	ASTV
		Pesticides															
	50-29-3	4,4'-DDT	µg/kg	10	10	1/2	LL7-2	6.5	-	6.5	10	N/A	10,667 [g]	N/A	N/A	N	BSTV
	60-57-1	Dieldrin	µg/kg	8.8	8.8	1/2	LL7-4	5.5	-	5.5	8.8	5.8	1 [g]	N/A	N/A	Y	ASTV
	53494-70-5	Endrin ketone	µg/kg	6.4	6.4	1/2	LL7-2	6.5	-	6.5	6.4	N/A	1,000	N/A	N/A	N	BSTV
		TAL-Metals and Cyanide															
	7429-90-5	Aluminum	mg/kg	7480	13600	10/10	LL7-3	N/A	-	N/A	13600	19000	55,000 [b]	N/A	N/A	N	HYP
	7440-36-0	Antimony	mg/kg	0.78	5.8	3/8	LL7-2	11.6	-	19.6	5.8	N/A	1.3 [c]	N/A	N/A	Y	ASTV
	7440-38-2	Arsenic	mg/kg	5.4	390	10/10	LL7-1	N/A	-	N/A	390	11	30	N/A	N/A	Y	ASTV
	7440-39-3	Barium	mg/kg	295	8000	10/10	LL7-1	N/A	-	N/A	8000	210	300 [a]	N/A	N/A	Y	ASTV
	7440-41-7	Beryllium	mg/kg	0.56	1	10/10	LL6-2	N/A	-	N/A	1	0.96	250 [d]	N/A	N/A	N	BSTV
	7440-43-9	Cadmium	mg/kg	37.4	2490	10/10	LL7-1	N/A	-	N/A	2490	3.3	10 [a]	N/A	N/A	Y	ASTV
	7440-70-2	Calcium	mg/kg	16500	94500	10/10	LL7-3	N/A	-	N/A	94500	40000	N/A	N/A	N/A	N	ENUT
	7440-47-3	Chromium	mg/kg	18.8	36.8	8/10	LL8-2	19	-	19.7	36.8	40	32	N/A	N/A	N	BSL
	7440-48-4	Cobalt	mg/kg	7.5	18.8	10/10	LL7-1	N/A	-	N/A	18.8	12	0.49 [b]	N/A	N/A	Y	ASTV
	7440-50-8	Copper	mg/kg	146	2240	10/10	LL7-1	N/A	-	N/A	2240	52	82,500 [d]	N/A	N/A	N	BSTV
	57-12-5	Cyanide	mg/kg	0.94	2.6	2/2	LL7-2	N/A	-	N/A	2.6	0.87	40	N/A	N/A	N	BSTV
	7439-89-6	Iron	mg/kg	18000	50000	10/10	LL6-1	N/A	-	N/A	50000	32000	640 [b]	N/A	N/A	Y	ASTV
	7439-92-1	Lead	mg/kg	105	12500	10/10	LL7-1	N/A	-	N/A	12500	44	107	N/A	N/A	Y	ASTV
	7439-95-4	Magnesium	mg/kg	3770	14700	10/10	LL7-3	N/A	-	N/A	14700	15000	N/A	N/A	N/A	N	ENUT
	7439-96-5	Manganese	mg/kg	363	1600	10/10	LL6-2	N/A	-	N/A	1600	930	57 [b]	N/A	N/A	Y	ASTV
	7439-97-6	Mercury	mg/kg	0.19	6.8	10/10	LL7-1	N/A	-	N/A	6.8	0.22	3.4 [h]	N/A	N/A	Y	ASTV
	7440-02-0	Nickel	mg/kg	17	34.5	10/10	LL8-2	N/A	-	N/A	34.5	33	700	N/A	N/A	N	BSTV
	7440-09-7	Potassium	mg/kg	1080	2100	10/10	LL6-3	N/A	-	N/A	2100	2800	N/A	N/A	N/A	N	ENUT
	7782-49-2	Selenium	mg/kg	2.6	14.2	10/10	LL7-1	N/A	-	N/A	14.2	N/A	3.3	N/A	N/A	Y	ASTV
	7440-22-4	Silver	mg/kg	0.58	68.7	10/10	LL7-1	N/A	-	N/A	68.7	1.7	39	N/A	N/A	Y	ASTV
	7440-23-5	Sodium	mg/kg	779	4990	4/10	LL7-1	703	-	16000	4990	710	N/A	N/A	N/A	N	ENUT
	7440-28-0	Thallium	mg/kg	0.58	1.6	4/10	LL8-1	4.6	-	8.9	1.6	1.2	3.4	N/A	N/A	N	BSTV
	7440-62-2	Vanadium	mg/kg	22.4	35.4	10/10	LL7-3	N/A	-	N/A	35.4	40	163 [a]	N/A	N/A	N	BSTV
	7440-66-6	Zinc	mg/kg	3400	150000	10/10	LL7-1	N/A	-	N/A	150000	220	4000 [c]	N/A	N/A	Y	ASTV
		Metals-SPLP															
	7440-38-2 (leached)	Arsenic (leached)	mg/L	0.0044	0.0045	2/2	LL7-4	N/A	-	N/A	0.0045	N/A	0.05	N/A	N/A	N	BSTV
	7440-39-3 (leached)	Barium (leached)	mg/L	0.0475	0.05	2/2	LL7-4	N/A	-	N/A	0.05	N/A	0.3 [a]	N/A	N/A	N	BSTV
	7440-43-9 (leached)	Cadmium (leached)	mg/L	0.0039	0.0047	2/2	LL7-4	N/A	-	N/A	0.0047	N/A	0.0008 [a]	N/A	N/A	Y	ASTV
	7440-47-3 (leached)	Chromium (leached)	mg/L	0.0045	0.0045	1/2	LL7-2	0.01	-	0.01	0.0045	N/A	0.1	N/A	N/A	N	BSTV
	7439-92-1 (leached)	Lead (leached)	mg/L	0.0331	0.0367	2/2	LL7-4	N/A	-	N/A	0.0367	N/A	0.0075	N/A	N/A	Y	ASTV
	7439-97-6 (leached)	Mercury (leached)	mg/L	0.00014	0.00016	2/2	LL7-4	N/A	-	N/A	0.00016	N/A	0.001	N/A	N/A	N	BSTV

Table 2.2
Occurrence, Distribution, and Selection of Chemicals of Potential Concern
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Floodplain Surface Soil to Groundwater
Exposure Area: Floodplain Area 1B
Receptor: Trespasser
Receptor Age: Adolescent

Exposure Point	CAS Number	Chemical of Potential Concern	Units	Minimum Detect	Maximum Detect	Detection Frequency	Max Detect Location	Minimum Non-Detect RANGE		Maximum Non-Detect RANGE	Concentration used for Screening [1]	Background Value [2]	Screening Toxicity Value [3,4]	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Final COPC Flag (Y/N)	Rationale for Selection or Deletion [5]
Surface		**Miscellaneous-SPLP**															
Soil to	7726-95-6	Bromide	mg/L	3.01	3.01	1/2	LL7-4	0.1	-	0.1	3.01	N/A	N/A	N/A	N/A	N	NSTV [f]
Groundwater	16887-00-6	Chloride	mg/L	0.875	2.16	2/2	LL7-4	N/A	-	N/A	2.16	N/A	200	N/A	N/A	N	BSTV
	16984-48-8	Fluoride	mg/L	0.565	1.48	2/2	LL7-2	N/A	-	N/A	1.48	N/A	1 [d]	N/A	N/A	Y	ASTV
	14797-55-8	Nitrate as N	mg/L	0.065	0.065	1/2	LL7-2	0.05	-	0.05	0.065	N/A	2.5 [c]	N/A	N/A	N	BSTV
	98059-61-1	Phosphate	mg/L	0.815	0.815	1/2	LL7-2	0.05	-	0.05	0.815	N/A	N/A	N/A	N/A	N	NSTV [g]
	14808-79-8	Sulfate	mg/L	11.1	12.6	2/2	LL7-4	N/A	-	N/A	12.6	N/A	400	N/A	N/A	N	BSTV

Notes:
[1] Maximum concentration was used as the screening concentration.
[2] Background values represent Upper Prediction Limits (UPLs) from Goose Lake data. When UPLs could not be calculated due to small sample size, maximum background values were used provided that the maximum concentration was not an outlier.
[3] Screening toxicity value represents the most conservative screening criteria from Tiered Approach to Corrective Action Objectives (TACO) soil remediation objectives for the soil component of the groundwater ingestion exposure route (Class I), and non-TACO or provisional soil remediation objectives for the soil component of the groundwater ingestion exposure route (Class I).
[4] For original screening toxicity value prior to adjustment for Mixture Rule, refer to Appendix E tables.
[5] Rationale codes:
HYP = Excluded based on hypothesis testing, which indicated site concentrations are not significantly different than background concentrations.
BSL = Excluded based on comparison to background value.
ASTV = Retained because screening concentration is above screening toxicity value.
BSTV = Excluded because screening concentration is below screening toxicity value.
NSTV = No screening toxicity value available. Constituent has no associated toxicity value for quantitative evaluation; therefore, this constituent is not retained as a COPC.
ENUT = Essential nutrient.
cPAH = Retained because constituent is a carcinogenic PAH greater than the background value.
[a] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Kidney; n = 6.
[b] When TACO values were unavailable, the USEPA Regional Screening Level (RSL) Risk-Based Soil Screening Levels (SSLs) were used as the screening values.
[c] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Circulatory System; n = 4.
[d] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Gastrointestinal System; n = 4.
[e] Constituent is not site-related and has no associated toxicity value for quantitative evaluation; therefore this constituent is not retained as a COPC.
[f] Constituent has no associated toxicity value for quantitative evaluation; therefore this constituent is not retained as a COPC.
[g] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Liver; n = 3.
[h] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Immune System; n = 2.
Table contains detected constituents only.
ARAR/TBC = Applicable or Relevant and Appropriate Requirement / To Be Considered
COPC = Chemical of Potential Concern
SVOC = semivolatile organic compound
PCB = polychlorinated biphenyl
TAL = target analyte list
SPLP = synthetic precipitation leaching procedure
N/A = Not available
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
mg/L = milligram per liter

Table 2.3
Occurrence, Distribution, and Selection of Chemicals of Potential Concern
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Floodplain Surface Soil
Exposure Area: Floodplain Area 1C
Receptor: Trespasser
Receptor Age: Adolescent

Exposure Point	CAS Number	Chemical of Potential Concern	Units	Detection Frequency	Minimum Detect	Maximum Detect	Max Detect Location	Minimum Non-Detect RANGE		Maximum Non-Detect RANGE	Concentration used for Screening [1]	Background Value [2]	Screening Toxicity Value [3,4]	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Final COPC Flag (Y/N)	Rationale for Selection or Deletion [5]
Surface Soil		**PCBs**															
	11097-69-1	Aroclor 1254	µg/kg	1/3	260	260	LL12-2	46	-	47	260	44	220	N/A	N/A	Y	ASTV
	11096-82-5	Aroclor 1260	µg/kg	1/3	50	50	LL12-2	46	-	47	50	N/A	220	N/A	N/A	N	BSTV
		Pesticides															
	72-54-8	4,4'-DDD	µg/kg	1/3	1.1	1.1	LL10-1	3.3	-	4.7	1.1	1.5	2,000	N/A	N/A	N	BSTV
	72-55-9	4,4'-DDE	µg/kg	2/2	1.7	2.3	LL10-1	N/A	-	N/A	2.3	2.3	1,400	N/A	N/A	N	BSTV
	50-29-3	4,4'-DDT	µg/kg	2/3	1.9	17	LL12-2	4.7	-	4.7	17	N/A	1,700	N/A	N/A	N	BSTV
	5103-71-9	Alpha-Chlordane	µg/kg	2/3	0.85	2	LL12-2	2.4	-	2.4	2	3.9	1,600	N/A	N/A	N	BSTV
	60-57-1	Dieldrin	µg/kg	3/3	4.1	13	LL12-2	N/A	-	N/A	13	5.8	30	N/A	N/A	N	BSTV
	72-20-8	Endrin	µg/kg	1/3	3.2	3.2	LL12-2	4.6	-	4.7	3.2	N/A	18,000	N/A	N/A	N	BSTV
	7421-93-4	Endrin aldehyde	µg/kg	1/3	1.2	1.2	LL10-1	3.3	-	4.7	1.2	N/A	18,000	N/A	N/A	N	BSTV
	5103-74-2	gamma-Chlordane	µg/kg	2/3	1.2	1.3	LL14-1	1.7	-	1.7	1.3	2.9	1,600	N/A	N/A	N	BSTV
	1024-57-3	Heptachlor epoxide	µg/kg	1/3	0.86	0.86	LL10-1	1.7	-	2.4	0.86	N/A	53	N/A	N/A	N	BSTV
		TAL-Metals and Cyanide															
	7429-90-5	Aluminum	mg/kg	29/29	2130	28600	LL9-2	N/A	-	N/A	28600	19000	77,000	N/A	N/A	N	BSTV
	7440-36-0	Antimony	mg/kg	1/24	0.62	0.62	LL13-1	5.7	-	35.7	0.62	N/A	15.5 [b]	N/A	N/A	N	BSTV
	7440-38-2	Arsenic	mg/kg	29/29	6.2	49.3	LL9-1	N/A	-	N/A	49.3	11	0.39	N/A	N/A	Y	ASTV
	7440-39-3	Barium	mg/kg	29/29	43.2	3230	LL10-4	N/A	-	N/A	3230	210	1,833 [d]	N/A	N/A	Y	ASTV
	7440-41-7	Beryllium	mg/kg	29/29	0.2	1.7	LL9-2	N/A	-	N/A	1.7	0.96	53 [c]	N/A	N/A	N	BSTV
	7440-43-9	Cadmium	mg/kg	29/29	3.1	168	LL12-3	N/A	-	N/A	168	3.3	70	N/A	N/A	Y	ASTV
	7440-70-2	Calcium	mg/kg	29/29	10800	160000	LL10-5,LL11-4	N/A	-	N/A	160000	40000	N/A	N/A	N/A	N	ENUT
	7440-47-3	Chromium	mg/kg	29/29	4.9	72.4	LL9-2	N/A	-	N/A	72.4	40	230	N/A	N/A	N	BSTV
	7440-48-4	Cobalt	mg/kg	29/29	4.2	103	LL13-3	N/A	-	N/A	103	12	23	N/A	N/A	Y	ASTV
	7440-50-8	Copper	mg/kg	29/29	30.4	8310	LL12-3	N/A	-	N/A	8310	52	967 [c]	N/A	N/A	Y	ASTV
	57-12-5	Cyanide	mg/kg	1/3	0.48	0.48	LL10-1	3.5	-	3.6	0.48	0.87	1,600	N/A	N/A	N	BSTV
	7439-89-6	Iron	mg/kg	29/29	13800	184000	LL10-5	N/A	-	N/A	184000	32000	18,333 [c]	N/A	N/A	Y	ASTV
	7439-92-1	Lead	mg/kg	29/29	21.3	2280	LL9-1	N/A	-	N/A	2280	44	400	N/A	N/A	Y	ASTV
	7439-95-4	Magnesium	mg/kg	29/29	3880	33000	LL9-2	N/A	-	N/A	33000	15000	N/A	N/A	N/A	N	ENUT
	7439-96-5	Manganese	mg/kg	29/29	244	10100	LL10-4	N/A	-	N/A	10100	930	800 [a]	N/A	N/A	Y	ASTV
	7439-97-6	Mercury	mg/kg	25/29	0.077	2	LL9-1	0.11	-	0.34	2	0.23	3.9 [e]	N/A	N/A	N	BSTV
	7440-02-0	Nickel	mg/kg	29/29	8.4	65	LL9-2	N/A	-	N/A	65	33	1,500	N/A	N/A	N	BSTV
	7440-09-7	Potassium	mg/kg	29/29	261	3450	LL9-2	N/A	-	N/A	3450	2800	N/A	N/A	N/A	N	ENUT
	7782-49-2	Selenium	mg/kg	27/29	0.85	7.9	LL10-5	4.6	-	9.2	7.9	N/A	390	N/A	N/A	N	BSTV
	7440-22-4	Silver	mg/kg	28/29	0.46	13.6	LL9-1	1.1	-	1.1	13.6	1.7	390	N/A	N/A	N	BSTV
	7440-23-5	Sodium	mg/kg	22/29	211	3650	LL12-3	534	-	14100	3650	710	N/A	N/A	N/A	N	ENUT
	7440-28-0	Thallium	mg/kg	6/29	0.67	1.3	LL13-4	2.4	-	8.4	1.3	1.2	6.3	N/A	N/A	N	BSTV
	7440-62-2	Vanadium	mg/kg	29/29	9.2	65.3	LL9-2	N/A	-	N/A	65.3	40	390	N/A	N/A	N	BSTV
	7440-66-6	Zinc	mg/kg	29/29	449	65300	LL12-3	N/A	-	N/A	65300	220	11,500 [b]	N/A	N/A	Y	ASTV

Table 2.3
Occurrence, Distribution, and Selection of Chemicals of Potential Concern
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Floodplain Surface Soil
Exposure Area: Floodplain Area 1C
Receptor: Trespasser
Receptor Age: Adolescent

Notes:
[1] Maximum concentration was used as the screening concentration.
[2] Background values represent Upper Prediction Limits (UPLs) from Goose Lake data. When UPLs could not be calculated due to small sample size, maximum background values were used provided that the maximum concentration was not an outlier.
[3] Screening toxicity value represents the most conservative screening criteria from USEPA Regional Screening Levels, Soil Remediation Objectives from Tiered Approach to Corrective Action Objectives (TACO), or non-TACO or provisional soil remediation objectives.
[4] For original screening toxicity value prior to adjustment for Mixture Rule, refer to Appendix E tables.
[5] Rationale codes:
HYP = Excluded based on hypothesis testing, which indicated site concentrations are not significantly different than background concentrations.
BSL = Excluded based on comparison to background value.
ASTV = Retained because screening concentration is above screening toxicity value.
BSTV = Excluded because screening concentration is below screening toxicity value.
ENUT = Essential nutrient.
[a] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Central Nervous System; n = 2.
[b] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Circulatory System; n = 2.
[c] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Gastrointestinal System; n = 3.
[d] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Kidney; n = 3.
[e] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Immune System; n = 2.
Table contains detected constituents only.
ARAR/TBC = Applicable or Relevant and Appropriate Requirement / To Be Considered
COPC = Chemical of Potential Concern
SVOC = semivolatile organic compound
PCB = polychlorinated biphenyl
TAL = target analyte list
N/A = Not available
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram

Table 2.4
Occurrence, Distribution, and Selection of Chemicals of Potential Concern
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Floodplain Surface Soil to Groundwater
Exposure Area: Floodplain Area 1C
Receptor: Trespasser
Receptor Age: Adolescent

Exposure Point	CAS Number	Chemical of Potential Concern	Units	Detection Frequency	Minimum Detect	Maximum Detect	Max Detect Location	Minimum Non-Detect RANGE		Maximum Non-Detect RANGE	Concentration used for Screening [1]	Background Value [2]	Screening Toxicity Value [3,4]	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Final COPC Flag (Y/N)	Rationale for Selection or Deletion [5]
Surface		**PCBs**															
Soil to	11097-69-1	Aroclor 1254	µg/kg	1/3	260	260	LL12-2	46	-	47	260	44	8.8 [a]	N/A	N/A	Y	ASTV
Groundwater	11096-82-5	Aroclor 1260	µg/kg	1/3	50	50	LL12-2	46	-	47	50	N/A	24 [a]	N/A	N/A	Y	ASTV
		Pesticides															
	72-54-8	4,4'-DDD	µg/kg	1/3	1.1	1.1	LL10-1	3.3	-	4.7	1.1	1.5	16,000	N/A	N/A	N	BSTV
	72-55-9	4,4'-DDE	µg/kg	2/2	1.7	2.3	LL10-1	N/A	-	N/A	2.3	2.3	54,000	N/A	N/A	N	BSTV
	50-29-3	4,4'-DDT	µg/kg	2/3	1.9	17	LL12-2	4.7	-	4.7	17	N/A	8,000 [c]	N/A	N/A	N	BSTV
	5103-71-9	Alpha-Chlordane	µg/kg	2/3	0.85	2	LL12-2	2.4	-	2.4	2	3.9	10,000	N/A	N/A	N	BSTV
	60-57-1	Dieldrin	µg/kg	3/3	4.1	13	LL12-2	N/A	-	N/A	13	5.8	1 [c]	N/A	N/A	Y	ASTV
	72-20-8	Endrin	µg/kg	1/3	3.2	3.2	LL12-2	4.6	-	4.7	3.2	N/A	125 [c,d]	N/A	N/A	N	BSTV
	7421-93-4	Endrin aldehyde	µg/kg	1/3	1.2	1.2	LL10-1	3.3	-	4.7	1.2	N/A	1,000	N/A	N/A	N	BSTV
	5103-74-2	gamma-Chlordane	µg/kg	2/3	1.2	1.3	LL14-1	1.7	-	1.7	1.3	2.9	10,000	N/A	N/A	N	BSTV
	1024-57-3	Heptachlor epoxide	µg/kg	1/3	0.86	0.86	LL10-1	1.7	-	2.4	0.86	N/A	175 [c]	N/A	N/A	N	BSTV
		TAL-Metals and Cyanide															
	7429-90-5	Aluminum	mg/kg	29/29	2130	28600	LL9-2	N/A	-	N/A	28600	19000	55,000 [b]	N/A	N/A	N	BSTV
	7440-36-0	Antimony	mg/kg	1/24	0.62	0.62	LL13-1	5.7	-	35.7	0.62	N/A	2 [e]	N/A	N/A	N	BSTV
	7440-38-2	Arsenic	mg/kg	29/29	6.2	49.3	LL9-1	N/A	-	N/A	49.3	11	30	N/A	N/A	Y	ASTV
	7440-39-3	Barium	mg/kg	29/29	43.2	3230	LL10-4	N/A	-	N/A	3230	210	600 [g]	N/A	N/A	Y	ASTV
	7440-41-7	Beryllium	mg/kg	29/29	0.2	1.7	LL9-2	N/A	-	N/A	1.7	0.96	250 [f]	N/A	N/A	N	BSTV
	7440-43-9	Cadmium	mg/kg	29/29	3.1	168	LL12-3	N/A	-	N/A	168	3.3	20 [g]	N/A	N/A	Y	ASTV
	7440-70-2	Calcium	mg/kg	29/29	10800	160000	LL10-5,LL11-4	N/A	-	N/A	160000	40000	N/A	N/A	N/A	N	ENUT
	7440-47-3	Chromium	mg/kg	29/29	4.9	72.4	LL9-2	N/A	-	N/A	72.4	40	32	N/A	N/A	Y	ASTV
	7440-48-4	Cobalt	mg/kg	29/29	4.2	103	LL13-3	N/A	-	N/A	103	12	0.49 [a]	N/A	N/A	Y	ASTV
	7440-50-8	Copper	mg/kg	29/29	30.4	8310	LL12-3	N/A	-	N/A	8310	52	82,500 [f]	N/A	N/A	N	BSTV
	57-12-5	Cyanide	mg/kg	1/3	0.48	0.48	LL10-1	3.5	-	3.6	0.48	0.87	40	N/A	N/A	N	BSTV
	7439-89-6	Iron	mg/kg	29/29	13800	184000	LL10-5	N/A	-	N/A	184000	32000	640 [a]	N/A	N/A	Y	ASTV
	7439-92-1	Lead	mg/kg	29/29	21.3	2280	LL9-1	N/A	-	N/A	2280	44	107	N/A	N/A	Y	ASTV
	7439-95-4	Magnesium	mg/kg	29/29	3880	33000	LL9-2	N/A	-	N/A	33000	15000	N/A	N/A	N/A	N	ENUT
	7439-96-5	Manganese	mg/kg	29/29	244	10100	LL10-4	N/A	-	N/A	10100	930	57 [a]	N/A	N/A	Y	ASTV
	7439-97-6	Mercury	mg/kg	25/29	0.077	2	LL9-1	0.11	-	0.34	2	0.23	3.2 [h]	N/A	N/A	N	BSTV
	7440-02-0	Nickel	mg/kg	29/29	8.4	65	LL9-2	N/A	-	N/A	65	33	700	N/A	N/A	N	BSTV
	7440-09-7	Potassium	mg/kg	29/29	261	3450	LL9-2	N/A	-	N/A	3450	2800	N/A	N/A	N/A	N	ENUT
	7782-49-2	Selenium	mg/kg	27/29	0.85	7.9	LL10-5	4.6	-	9.2	7.9	N/A	3.3	N/A	N/A	Y	ASTV
	7440-22-4	Silver	mg/kg	28/29	0.46	13.6	LL9-1	1.1	-	1.1	13.6	1.7	39	N/A	N/A	N	BSTV
	7440-23-5	Sodium	mg/kg	22/29	211	3650	LL12-3	534	-	14100	3650	710	N/A	N/A	N/A	N	ENUT
	7440-28-0	Thallium	mg/kg	6/29	0.67	1.3	LL13-4	2.4	-	8.4	1.3	1.2	3.4	N/A	N/A	N	BSTV
	7440-62-2	Vanadium	mg/kg	29/29	9.2	65.3	LL9-2	N/A	-	N/A	65.3	40	327 [g]	N/A	N/A	N	BSTV
	7440-66-6	Zinc	mg/kg	29/29	449	65300	LL12-3	N/A	-	N/A	65300	220	5333 [e]	N/A	N/A	Y	ASTV
		Metals-SPLP															
	7440-38-2 (leached)	Arsenic (leached)	mg/L	2/3	0.0035	0.0067	LL12-2	0.0021	-	0.0021	0.0067	N/A	0.05	N/A	N/A	N	BSTV
	7440-39-3 (leached)	Barium (leached)	mg/L	3/3	0.0559	0.0828	LL12-2	N/A	-	N/A	0.0828	N/A	0.7 [g]	N/A	N/A	N	BSTV
	7440-43-9 (leached)	Cadmium (leached)	mg/L	3/3	0.002	0.0416	LL10-1	N/A	-	N/A	0.0416	N/A	0.002 [g]	N/A	N/A	Y	ASTV
	7440-47-3 (leached)	Chromium (leached)	mg/L	2/3	0.0141	0.0203	LL14-1	0.0007	-	0.0007	0.0203	N/A	0.1	N/A	N/A	N	BSTV
	7439-92-1 (leached)	Lead (leached)	mg/L	2/3	0.015	0.0407	LL12-2	0.0033	-	0.0033	0.0407	N/A	0.0075	N/A	N/A	Y	ASTV
	7439-97-6 (leached)	Mercury (leached)	mg/L	2/3	0.00012	0.00014	LL12-2	0.0001	-	0.0001	0.00014	N/A	0.001 [h]	N/A	N/A	N	BSTV

Table 2.4
Occurrence, Distribution, and Selection of Chemicals of Potential Concern
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Floodplain Surface Soil to Groundwater
Exposure Area: Floodplain Area 1C
Receptor: Trespasser
Receptor Age: Adolescent

Exposure Point	CAS Number	Chemical of Potential Concern	Units	Detection Frequency	Minimum Detect	Maximum Detect	Max Detect Location	Minimum Non-Detect RANGE		Maximum Non-Detect RANGE	Concentration used for Screening [1]	Background Value [2]	Screening Toxicity Value [3,4]	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Final COPC Flag (Y/N)	Rationale for Selection or Deletion [5]
Surface Soil to Groundwater		**Miscellaneous-SPLP**															
	16887-00-6	Chloride	mg/L	2/3	0.675	1.16	LL10-1	2	-	2	1.16	N/A	200	N/A	N/A	N	BSTV
	16984-48-8	Fluoride	mg/L	3/3	0.49	2.23	LL10-1	N/A	-	N/A	2.23	N/A	1 [f]	N/A	N/A	Y	ASTV
	14797-55-8	Nitrate as N	mg/L	1/3	0.32	0.32	LL14-1	0.05	-	0.05	0.32	N/A	3.3 [e]	N/A	N/A	N	BSTV
	98059-61-1	Phosphate	mg/L	2/3	0.41	2.73	LL12-2	0.05	-	0.05	2.73	N/A	N/A	N/A	N/A	N	NSTV [b]
	14808-79-8	Sulfate	mg/L	3/3	7.15	55	LL10-1	N/A	-	N/A	55	N/A	400	N/A	N/A	N	BSTV

Notes:
[1] Maximum concentration was used as the screening concentration.
[2] Background values represent Upper Prediction Limits (UPLs) from Goose Lake data. When UPLs could not be calculated due to small sample size, maximum background values were used provided that the maximum concentration was not an outlier.
[3] Screening toxicity value represents the most conservative screening criteria from Tiered Approach to Corrective Action Objectives (TACO) soil remediation objectives for the soil component of the groundwater ingestion exposure route (Class I), and non-TACO or provisional soil remediation objectives for the soil component of the groundwater ingestion exposure route (Class I).
[4] For original screening toxicity value prior to adjustment for Mixture Rule, refer to Appendix E tables.
[5] Rationale codes:
BSL = Excluded based on comparison to background value.
ASTV = Retained because screening concentration is above screening toxicity value.
BSTV = Excluded because screening concentration is below screening toxicity value.
NSTV = No screening toxicity value available. Constituent has no associated toxicity value for quantitative evaluation; therefore, this constituent is not retained as a COPC.
ENUT = Essential nutrient.
[a] When TACO values were unavailable, the USEPA Regional Screening Level (RSL) Risk-Based Soil Screening Levels (SSLs) were used as the screening values.
[b] Constituent has no associated toxicity value for quantitative evaluation; therefore this constituent is not retained as a COPC.
[c] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Liver; n = 4.
[d] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Central Nervous System; n = 2.
[e] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Circulatory System; n = 3.
[f] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Gastrointestinal System; n = 4.
[g] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Kidney; n = 3.
[h] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Immune System; n = 2.

Table contains detected constituents only.
ARAR/TBC = Applicable or Relevant and Appropriate Requirement / To Be Considered
COPC = Chemical of Potential Concern
SVOC = semivolatile organic compound
PCB = polychlorinated biphenyl
TAL = target analyte list
SPLP = synthetic precipitation leaching procedure
N/A = Not available
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
mg/L = milligram per liter

Table 2.5
Occurrence, Distribution, and Selection of Chemicals of Potential Concern
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Floodplain Surface Soil
Exposure Area: Floodplain Area 2
Receptor: Trespasser
Receptor Age: Adolescent

Exposure Point	CAS Number	Chemical of Potential Concern	Units	Minimum Detect	Maximum Detect	Detection Frequency	Max Detect Location	Minimum Non-Detect RANGE		Maximum Non-Detect RANGE	Concentration used for Screening [1]	Background Value [2]	Screening Toxicity Value [3,4]	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Final COPC Flag (Y/N)	Rationale for Selection or Deletion [5]
Surface Soil		**SVOCs**															
	56-55-3	Benzo(a)anthracene	µg/kg	120	120	1/3	LL1-1	390	-	550	120	170	150	N/A	N/A	Y	cPAH
	50-32-8	Benzo(a)pyrene	µg/kg	170	170	1/3	LL1-1	390	-	550	170	170	15	N/A	N/A	Y	ASTV
	205-99-2	Benzo(b)fluoranthene	µg/kg	170	170	1/3	LL1-1	390	-	550	170	250	150	N/A	N/A	Y	ASTV
	191-24-2	Benzo(g,h,i)perylene	µg/kg	120	120	1/3	LL1-1	390	-	550	120	N/A	150	N/A	N/A	N	BSTV
	207-08-9	Benzo(k)fluoranthene	µg/kg	160	160	1/3	LL1-1	390	-	550	160	200	1,500	N/A	N/A	Y	cPAH
	218-01-9	Chrysene	µg/kg	110	170	2/3	LL1-1	390	-	390	170	250	15,000	N/A	N/A	Y	cPAH
	206-44-0	Fluoranthene	µg/kg	120	230	2/3	LL1-1	390	-	390	230	200	2,300,000	N/A	N/A	N	BSTV
	193-39-5	Indeno(1,2,3-cd)pyrene	µg/kg	150	150	1/3	LL1-1	390	-	550	150	150	150	N/A	N/A	Y	cPAH
	129-00-0	Pyrene	µg/kg	130	200	2/3	LL1-1	390	-	390	200	250	283,333 [a]	N/A	N/A	N	BSL
		Pesticides															
	72-54-8	4,4'-DDD	µg/kg	1.3	1.3	1/3	LL5-1	3.9	-	5.3	1.3	1.5	2,000	N/A	N/A	N	BSTV
	72-55-9	4,4'-DDE	µg/kg	1.1	2.1	3/3	LL5-1	N/A	-	N/A	2.1	2.3	1,400	N/A	N/A	N	BSTV
	50-29-3	4,4'-DDT	µg/kg	2.5	2.5	1/3	LL5-1	3.9	-	5.3	2.5	N/A	1,700	N/A	N/A	N	BSTV
	5103-71-9	Alpha-Chlordane	µg/kg	1.1	1.1	1/3	LL5-1	2	-	2.7	1.1	3.9	1,600	N/A	N/A	N	BSTV
	60-57-1	Dieldrin	µg/kg	0.84	1.3	2/3	LL1-1	5.5	-	5.5	1.3	5.8	30	N/A	N/A	N	BSTV
	7421-93-4	Endrin aldehyde	µg/kg	1.4	1.4	1/3	LL1-1	3.9	-	5.5	1.4	N/A	18,000	N/A	N/A	N	BSTV
		TAL-Metals and Cyanide															
	7429-90-5	Aluminum	mg/kg	4990	19700	24/24	LL5-1	N/A	-	N/A	19700	19,000	77,000	N/A	N/A	N	BSTV
	7440-38-2	Arsenic	mg/kg	4.2	28.2	24/24	LL5-3	N/A	-	N/A	28.2	11	0.39	N/A	N/A	Y	ASTV
	7440-39-3	Barium	mg/kg	139	1180	24/24	LL5-3	N/A	-	N/A	1180	210	917 [a]	N/A	N/A	Y	ASTV
	7440-41-7	Beryllium	mg/kg	0.29	1	24/24	LL5-1	N/A	-	N/A	1	0.96	53 [c]	N/A	N/A	N	BSTV
	7440-43-9	Cadmium	mg/kg	1.5	25.5	24/24	LL5-3	N/A	-	N/A	25.5	3.3	70	N/A	N/A	N	BSTV
	7440-70-2	Calcium	mg/kg	12100	45200	24/24	LL1-1	N/A	-	N/A	45200	40000	N/A	N/A	N/A	N	ENUT
	7440-47-3	Chromium	mg/kg	9.8	60.1	24/24	LL3-1	N/A	-	N/A	60.1	40	230	N/A	N/A	N	BSTV
	7440-48-4	Cobalt	mg/kg	5.1	12.4	24/24	LL2-1,LL3-1	N/A	-	N/A	12.4	12	23	N/A	N/A	N	BSTV
	7440-50-8	Copper	mg/kg	16.8	99.1	24/24	LL5-3	N/A	-	N/A	99.1	52	967 [c]	N/A	N/A	N	BSTV
	7439-89-6	Iron	mg/kg	9870	36400	24/24	LL5-3	N/A	-	N/A	36400	32,000	18,333 [c]	N/A	N/A	Y	ASTV
	7439-92-1	Lead	mg/kg	36.3	189	24/24	LL5-1	N/A	-	N/A	189	44	400	N/A	N/A	N	BSTV
	7439-95-4	Magnesium	mg/kg	5770	14700	24/24	LL1-1	N/A	-	N/A	14700	15,000	N/A	N/A	N/A	N	ENUT
	7439-96-5	Manganese	mg/kg	407	1040	24/24	LL2-1	N/A	-	N/A	1040	930	1,600	N/A	N/A	N	BSTV
	7439-97-6	Mercury	mg/kg	0.058	0.48	22/24	LL5-1	0.11	-	0.15	0.48	0.22	7.8	N/A	N/A	N	BSTV
	7440-02-0	Nickel	mg/kg	10.9	43.1	24/24	LL3-1	N/A	-	N/A	43.1	33	1,500	N/A	N/A	N	BSTV
	7440-09-7	Potassium	mg/kg	743	2780	24/24	LL2-1	N/A	-	N/A	2780	2800	N/A	N/A	N/A	N	ENUT
	7782-49-2	Selenium	mg/kg	0.71	3	24/24	LL5-3	N/A	-	N/A	3	N/A	390	N/A	N/A	N	BSTV
	7440-22-4	Silver	mg/kg	0.18	1.6	24/24	LL5-3	N/A	-	N/A	1.6	1.7	390	N/A	N/A	N	BSL
	7440-23-5	Sodium	mg/kg	208	703	9/24	LL20-3	576	-	802	703	710	N/A	N/A	N/A	N	ENUT
	7440-62-2	Vanadium	mg/kg	15.3	37.8	24/24	LL3-4	N/A	-	N/A	37.8	40	390	N/A	N/A	N	BSTV
	7440-66-6	Zinc	mg/kg	187	2480	24/24	LL5-3	N/A	-	N/A	2480	220	11500 [b]	N/A	N/A	N	BSTV

Table 2.5
Occurrence, Distribution, and Selection of Chemicals of Potential Concern
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Floodplain Surface Soil
Exposure Area: Floodplain Area 2
Receptor: Trespasser
Receptor Age: Adolescent

Notes:
[1] Maximum concentration was used as the screening concentration.
[2] Background values represent Upper Prediction Limits (UPLs) from Goose Lake data. When UPLs could not be calculated due to small sample size, maximum background values were used provided that the maximum concentration was not an outlier.
[3] Screening toxicity value represents the most conservative screening criteria from USEPA Regional Screening Levels, Soil Remediation Objectives from Tiered Approach to Corrective Action Objectives (TACO), or non-TACO or provisional soil remediation objectives.
[4] For original screening toxicity value prior to adjustment for Mixture Rule, refer to Appendix E tables.
[5] Rationale codes:
HYP = Excluded based on hypothesis testing, which indicated site concentrations are not significantly different than background concentrations.
BSL = Excluded based on comparison to background value.
ASTV = Retained because screening concentration is above screening toxicity value.
BSTV = Excluded because screening concentration is below screening toxicity value.
ENUT = Essential nutrient.
[a] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Kidney; n = 6.
[b] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Circulatory System; n = 2.
[c] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Gastrointestinal System; n = 3.
Table contains detected constituents only.
ARAR/TBC = Applicable or Relevant and Appropriate Requirement / To Be Considered
COPC = Chemical of Potential Concern
SVOC = semivolatile organic compound
TAL = target analyte list
N/A = Not available
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram

Table 2.6
Occurrence, Distribution, and Selection of Chemicals of Potential Concern
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Floodplain Surface Soil to Groundwater
Exposure Area: Floodplain Area 2
Receptor: Trespasser
Receptor Age: Adolescent

Exposure Point	CAS Number	Chemical of Potential Concern	Units	Minimum Detect	Maximum Detect	Detection Frequency	Max Detect Location	Minimum Non-Detect RANGE		Maximum Non-Detect RANGE	Concentration used for Screening [1]	Background Value [2]	Screening Toxicity Value [3,4]	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Final COPC Flag (Y/N)	Rationale for Selection or Deletion [5]
Surface Soil to Groundwater		**SVOCs**															
	56-55-3	Benzo(a)anthracene	µg/kg	120	120	1/3	LL1-1	390	-	550	120	170	2,000	N/A	N/A	N	BSTV
	50-32-8	Benzo(a)pyrene	µg/kg	170	170	1/3	LL1-1	390	-	550	170	170	8,000	N/A	N/A	N	BSTV
	205-99-2	Benzo(b)fluoranthene	µg/kg	170	170	1/3	LL1-1	390	-	550	170	250	5,000	N/A	N/A	N	BSTV
	191-24-2	Benzo(g,h,i)perylene	µg/kg	120	120	1/3	LL1-1	390	-	550	120	N/A	27,000,000	N/A	N/A	N	BSTV
	207-08-9	Benzo(k)fluoranthene	µg/kg	160	160	1/3	LL1-1	390	-	550	160	200	49,000	N/A	N/A	N	BSTV
	218-01-9	Chrysene	µg/kg	110	170	2/3	LL1-1	390	-	390	170	250	160,000	N/A	N/A	N	BSTV
	206-44-0	Fluoranthene	µg/kg	120	230	2/3	LL1-1	390	-	390	230	200	95,556 [c,d,e]	N/A	N/A	N	BSTV
	193-39-5	Indeno(1,2,3-cd)pyrene	µg/kg	150	150	1/3	LL1-1	390	-	550	150	150	14,000	N/A	N/A	N	BSTV
	129-00-0	Pyrene	µg/kg	130	200	2/3	LL1-1	390	-	390	200	250	84,000 [c]	N/A	N/A	N	BSTV
		Pesticides															
	72-54-8	4,4'-DDD	µg/kg	1.3	1.3	1/3	LL5-1	3.9	-	5.3	1.3	1.5	16,000	N/A	N/A	N	BSTV
	72-55-9	4,4'-DDE	µg/kg	1.1	2.1	3/3	LL5-1	N/A	-	N/A	2.1	2.3	54,000	N/A	N/A	N	BSTV
	50-29-3	4,4'-DDT	µg/kg	2.5	2.5	1/3	LL5-1	3.9	-	5.3	2.5	N/A	10,667 [d]	N/A	N/A	N	BSTV
	5103-71-9	Alpha-Chlordane	µg/kg	1.1	1.1	1/3	LL5-1	2	-	2.7	1.1	3.9	10,000	N/A	N/A	N	BSTV
	60-57-1	Dieldrin	µg/kg	0.84	1.3	2/3	LL1-1	5.5	-	5.5	1.3	5.8	1.3 [d]	N/A	N/A	N	BSTV
	7421-93-4	Endrin aldehyde	µg/kg	1.4	1.4	1/3	LL1-1	3.9	-	5.5	1.4	N/A	1000	N/A	N/A	N	BSTV
		TAL-Metals and Cyanide															
	7429-90-5	Aluminum	mg/kg	4990	19700	24/24	LL5-1	N/A	-	N/A	19700	19,000	55,000 [a]	N/A	N/A	N	BSTV
	7440-38-2	Arsenic	mg/kg	4.2	28.2	24/24	LL5-3	N/A	-	N/A	28.2	11	30	N/A	N/A	N	BSTV
	7440-39-3	Barium	mg/kg	139	1180	24/24	LL5-3	N/A	-	N/A	1180	210	360 [c]	N/A	N/A	Y	ASTV
	7440-41-7	Beryllium	mg/kg	0.29	1	24/24	LL5-1	N/A	-	N/A	1	0.96	250 [f]	N/A	N/A	N	BSTV
	7440-43-9	Cadmium	mg/kg	1.5	25.5	24/24	LL5-3	N/A	-	N/A	25.5	3.3	12 [c]	N/A	N/A	Y	ASTV
	7440-70-2	Calcium	mg/kg	12100	45200	24/24	LL1-1	N/A	-	N/A	45200	40000	N/A	N/A	N/A	N	ENUT
	7440-47-3	Chromium	mg/kg	9.8	60.1	24/24	LL3-1	N/A	-	N/A	60.1	40	32	N/A	N/A	Y	ASTV
	7440-48-4	Cobalt	mg/kg	5.1	12.4	24/24	LL2-1,LL3-1	N/A	-	N/A	12.4	12	0.49 [a]	N/A	N/A	Y	ASTV
	7440-50-8	Copper	mg/kg	16.8	99.1	24/24	LL5-3	N/A	-	N/A	99.1	52	82,500 [f]	N/A	N/A	N	BSTV
	7439-89-6	Iron	mg/kg	9870	36400	24/24	LL5-3	N/A	-	N/A	36400	32,000	640 [a]	N/A	N/A	Y	ASTV
	7439-92-1	Lead	mg/kg	36.3	189	24/24	LL5-1	N/A	-	N/A	189	44	107	N/A	N/A	Y	ASTV
	7439-95-4	Magnesium	mg/kg	5770	14700	24/24	LL1-1	N/A	-	N/A	14700	15,000	N/A	N/A	N/A	N	ENUT
	7439-96-5	Manganese	mg/kg	407	1040	24/24	LL2-1	N/A	-	N/A	1040	930	57 [a]	N/A	N/A	Y	ASTV
	7439-97-6	Mercury	mg/kg	0.058	0.48	22/24	LL5-1	0.11	-	0.15	0.48	0.22	6.4	N/A	N/A	N	BSTV
	7440-02-0	Nickel	mg/kg	10.9	43.1	24/24	LL3-1	N/A	-	N/A	43.1	33	700	N/A	N/A	N	BSTV
	7440-09-7	Potassium	mg/kg	743	2780	24/24	LL2-1	N/A	-	N/A	2780	2800	N/A	N/A	N/A	N	ENUT
	7782-49-2	Selenium	mg/kg	0.71	3	24/24	LL5-3	N/A	-	N/A	3	N/A	3.3	N/A	N/A	N	BSTV
	7440-22-4	Silver	mg/kg	0.18	1.6	24/24	LL5-3	N/A	-	N/A	1.6	1.7	39	N/A	N/A	N	BSL
	7440-23-5	Sodium	mg/kg	208	703	9/24	LL20-3	576	-	802	703	710	N/A	N/A	N/A	N	ENUT
	7440-62-2	Vanadium	mg/kg	15.3	37.8	24/24	LL3-4	N/A	-	N/A	37.8	40	196 [c]	N/A	N/A	N	BSTV
	7440-66-6	Zinc	mg/kg	187	2480	24/24	LL5-3	N/A	-	N/A	2480	220	5,333 [e]	N/A	N/A	N	BSTV
		Metals-SPLP															
	7440-38-2 (leached)	Arsenic (leached)	mg/L	0.0044	0.0044	1/3	LL4-3	0.0021	-	0.0021	0.0044	N/A	0.05	N/A	N/A	N	BSTV
	7440-39-3 (leached)	Barium (leached)	mg/L	0.0128	0.228	3/3	LL4-3	N/A	-	N/A	0.228	N/A	0.7 [e]	N/A	N/A	N	BSTV
	7440-43-9 (leached)	Cadmium (leached)	mg/L	0.0028	0.0028	1/3	LL4-3	0.0002	-	0.005	0.0028	N/A	0.001 [c]	N/A	N/A	Y	ASTV
	7440-47-3 (leached)	Chromium (leached)	mg/L	0.00096	0.0109	3/3	LL4-3	N/A	-	N/A	0.0109	N/A	0.1	N/A	N/A	N	BSTV
	7439-92-1 (leached)	Lead (leached)	mg/L	0.0296	0.0296	1/3	LL4-3	0.003	-	0.0068	0.0296	N/A	0.0075	N/A	N/A	Y	ASTV
	7439-97-6 (leached)	Mercury (leached)	mg/L	0.00011	0.00011	1/3	LL4-3	0.0001	-	0.0001	0.00011	N/A	0.002	N/A	N/A	N	BSTV

Table 2.6
Occurrence, Distribution, and Selection of Chemicals of Potential Concern
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Floodplain Surface Soil to Groundwater
Exposure Area: Floodplain Area 2
Receptor: Trespasser
Receptor Age: Adolescent

Exposure Point	CAS Number	Chemical of Potential Concern	Units	Minimum Detect	Maximum Detect	Detection Frequency	Max Detect Location	Minimum Non-Detect RANGE		Maximum Non-Detect RANGE	Concentration used for Screening [1]	Background Value [2]	Screening Toxicity Value [3,4]	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Final COPC Flag (Y/N)	Rationale for Selection or Deletion [5]
Surface Soil to Groundwater		**Miscellaneous-SPLP**															
	16887-00-6	Chloride	mg/L	1.25	1.25	1/3	LL5-1	2	-	2	1.25	N/A	200	N/A	N/A	N	BSTV
	16984-48-8	Fluoride	mg/L	0.225	0.38	3/3	LL4-3	N/A	-	N/A	0.38	N/A	1 [f]	N/A	N/A	N	BSTV
	14797-55-8	Nitrate as N	mg/L	0.085	1.82	3/3	LL1-1	N/A	-	N/A	1.82	N/A	2.5 [e]	N/A	N/A	N	BSTV
	98059-61-1	Phosphate	mg/L	0.55	0.565	2/3	LL5-1	0.05	-	0.05	0.565	N/A	N/A	N/A	N/A	N	NSTV [b]
	14808-79-8	Sulfate	mg/L	2.26	28.5	3/3	LL5-1	N/A	-	N/A	28.5	N/A	400	N/A	N/A	N	BSTV

Notes:
[1] Maximum concentration was used as the screening concentration.
[2] Background values represent Upper Prediction Limits (UPLs) from Goose Lake data. When UPLs could not be calculated due to small sample size, maximum background values were used provided that the maximum concentration was not an outlier.
[3] Screening toxicity value represents the most conservative screening criteria from Tiered Approach to Corrective Action Objectives (TACO) soil remediation objectives for the soil component of the groundwater ingestion exposure route (Class I), and non-TACO or provisional soil remediation objectives for the soil component of the groundwater ingestion exposure route (Class I).
[4] For original screening toxicity value prior to adjustment for Mixture Rule, refer to Appendix E tables.
[5] Rationale codes:
BSL = Excluded based on comparison to background value.
ASTV = Retained because screening concentration is above screening toxicity value.
BSTV = Excluded because screening concentration is below screening toxicity value.
NSTV = No screening toxicity value available. Constituent has no associated toxicity value for quantitative evaluation; therefore, this constituent is not retained as a COPC.
ENUT = Essential nutrient.
[a] When TACO values were unavailable, the USEPA Regional Screening Level (RSL) Risk-Based Soil Screening Levels (SSLs) were used as the screening values.
[b] Constituent has no associated toxicity value for quantitative evaluation; therefore this constituent is not retained as a COPC.
[c] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Kidney; n = 5.
[d] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Liver; n = 3.
[e] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Circulatory System; n = 3.
[f] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Gastrointestinal System; n = 4.
Table contains detected constituents only.
ARAR/TBC = Applicable or Relevant and Appropriate Requirement / To Be Considered
COPC = Chemical of Potential Concern
SVOC = semivolatile organic compound
TAL = target analyte list
SPLP = synthetic precipitation leaching procedure
N/A = Not available
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
mg/L = milligram per liter

Table 2.7
Occurrence, Distribution, and Selection of Chemicals of Potential Concern
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Floodplain Surface Soil
Exposure Area: Floodplain Area 3
Receptor: Trespasser
Receptor Age: Adolescent

Exposure Point	CAS Number	Chemical of Potential Concern	Units	Minimum Detect	Maximum Detect	Detection Frequency	Max Detect Location	Minimum Non-Detect RANGE	Maximum Non-Detect RANGE	Concentration used for Screening [1]	Background Value [2]	Screening Toxicity Value [3,4]	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Final COPC Flag (Y/N)	Rationale for Selection or Deletion [5]
Surface Soil		**SVOCs**														
	90-10-0	1-Methylnaphthalene	µg/kg	1.7	1.7	1/5	LL16-2EA0-05	6.3	27	1.7	N/A	22,000	N/A	N/A	N	BSTV
	91-57-6	2-Methylnaphthalene	µg/kg	2.6	2.7	2/5	LL16-2EA0-05	11	27	2.7	N/A	310,000	N/A	N/A	N	BSTV
	83-32-9	Acenaphthene	µg/kg	4	4.2	2/5	LL16-2EA0-05	11	27	4.2	N/A	3,400,000	N/A	N/A	N	BSTV
	208-96-8	Acenaphthylene	µg/kg	9.7	36	5/5	LL16-2NA0-05	12	12	36	N/A	328,571 [a]	N/A	N/A	N	BSTV
	120-12-7	Anthracene	µg/kg	8.5	23	5/5	LL16-2NA0-05	N/A	N/A	23	N/A	17,000,000	N/A	N/A	N	BSTV
	56-55-3	Benzo(a)anthracene	µg/kg	39	120	5/5	LL16-2NA0-05	N/A	N/A	120	170	150	N/A	N/A	Y	cPAH
	50-32-8	Benzo(a)pyrene	µg/kg	50	140	5/5	LL16-2NA0-05	N/A	N/A	140	170	15	N/A	N/A	Y	ASTV
	205-99-2	Benzo(b)fluoranthene	µg/kg	88	260	5/5	LL16-2NA0-05	N/A	N/A	260	250	150	N/A	N/A	Y	ASTV
	191-24-2	Benzo(g,h,i)perylene	µg/kg	50	140	5/5	LL16-2NA0-05	N/A	N/A	140	N/A	150	N/A	N/A	N	BSTV
	207-08-9	Benzo(k)fluoranthene	µg/kg	29	80	5/5	LL16-2NA0-05	N/A	N/A	80	200	1,500	N/A	N/A	Y	cPAH
	218-01-9	Chrysene	µg/kg	54	150	5/5	LL16-2NA0-05	N/A	N/A	150	250	15,000	N/A	N/A	Y	cPAH
	53-70-3	Dibenz(a,h)anthracene	µg/kg	13	34	5/5	LL16-2NA0-05	N/A	N/A	34	N/A	15	N/A	N/A	Y	ASTV
	206-44-0	Fluoranthene	µg/kg	78	220	5/5	LL16-2NA0-05	N/A	N/A	220	200	2,300,000	N/A	N/A	N	BSTV
	193-39-5	Fluorene	µg/kg	3.9	5.9	3/5	LL16-2SA0-05	11	25	5.9	150	150	N/A	N/A	N	BSL
	193-39-5	Indeno(1,2,3-cd)pyrene	µg/kg	43	120	5/5	LL16-2NA0-05	N/A	N/A	120	150	150	N/A	N/A	Y	cPAH
	91-20-3	Naphthalene	µg/kg	3	3.1	2/5	LL16-2EA0-05	11	27	3.1	N/A	900 [b]	N/A	N/A	N	BSTV
	85-01-8	Phenanthrene	µg/kg	24	65	5/5	LL16-2NA0-05	N/A	N/A	65	N/A	328,571 [a]	N/A	N/A	N	BSTV
	129-00-0	Pyrene	µg/kg	70	190	5/5	LL16-2NA0-05	N/A	N/A	190	250	242,857 [a]	N/A	N/A	N	BSL
		Pesticides														
	50-29-3	4,4'-DDT	µg/kg	6.1	6.1	1/1	LL16-20-05	N/A	N/A	6.1	N/A	1,700	N/A	N/A	N	BSTV
	319-85-7	Beta-BHC	µg/kg	28	28	1/1	LL16-20-05	N/A	N/A	28	N/A	270	N/A	N/A	N	BSTV
	1031-07-8	Endosulfan sulfate	µg/kg	14	14	1/1	LL16-20-05	N/A	N/A	14	N/A	370,000	N/A	N/A	N	BSTV
	72-20-8	Endrin	µg/kg	6.1	6.1	1/1	LL16-20-05	N/A	N/A	6.1	N/A	18,000	N/A	N/A	N	BSTV
	7421-93-4	Endrin aldehyde	µg/kg	13	13	1/1	LL16-20-05	N/A	N/A	13	N/A	18,000	N/A	N/A	N	BSTV
	53494-70-5	Endrin ketone	µg/kg	24	24	1/1	LL16-20-05	N/A	N/A	24	N/A	18,000	N/A	N/A	N	BSTV
	5103-74-2	gamma-Chlordane	µg/kg	7.1	7.1	1/1	LL16-20-05	N/A	N/A	7.1	2.9	1,600	N/A	N/A	N	BSTV
	72-43-5	Methoxychlor	µg/kg	82	82	1/1	LL16-20-05	N/A	N/A	82	N/A	310,000	N/A	N/A	N	BSTV
		TAL-Metals and Cyanide														
	7429-90-5	Aluminum	mg/kg	11200	19100	20/20	LL19-10-05	N/A	N/A	19100	19000	77,000	N/A	N/A	N	BSTV
	7440-36-0	Antimony	mg/kg	1.3	1.4	2/20	LL17-20-05	6.9	8.9	1.4	N/A	8 [c]	N/A	N/A	N	BSTV
	7440-38-2	Arsenic	mg/kg	6.7	8.5	20/20	LL18-30-05	N/A	N/A	8.5	11	0.39	N/A	N/A	N	BSL
	7440-39-3	Barium	mg/kg	137	206	20/20	LL18-30-05	N/A	N/A	206	210	786 [a]	N/A	N/A	N	BSL
	7440-41-7	Beryllium	mg/kg	0.64	0.98	20/20	LL19-10-05	N/A	N/A	0.98	0.96	53 [d]	N/A	N/A	N	BSTV
	7440-43-9	Cadmium	mg/kg	1.9	8.9	20/20	LL18-30-05	N/A	N/A	8.9	3.3	70	N/A	N/A	N	BSTV
	7440-70-2	Calcium	mg/kg	15100	31500	20/20	LL16-10-05	N/A	N/A	31500	40000	N/A	N/A	N/A	N	ENUT
	7440-47-3	Chromium	mg/kg	36	55.5	20/20	LL18-30-05	N/A	N/A	55.5	40	230	N/A	N/A	N	BSTV
	7440-48-4	Cobalt	mg/kg	7.8	11.7	20/20	LL19-10-05	N/A	N/A	11.7	12	23	N/A	N/A	N	BSL
	7440-50-8	Copper	mg/kg	42.1	77.4	20/20	LL16-10-05	N/A	N/A	77.4	52	967 [d]	N/A	N/A	N	BSTV
	7439-89-6	Iron	mg/kg	21500	29100	20/20	LL19-10-05	N/A	N/A	29100	32000	18,333 [d]	N/A	N/A	N	BSL
	7439-92-1	Lead	mg/kg	38.7	73.2	20/20	LL18-30-05	N/A	N/A	73.2	44	400	N/A	N/A	N	BSTV
	7439-95-4	Magnesium	mg/kg	8150	12500	20/20	LL19-60-05	N/A	N/A	12500	15000	N/A	N/A	N/A	N	ENUT
	7439-96-5	Manganese	mg/kg	323	840	20/20	LL16-30-05	N/A	N/A	840	930	800 [e]	N/A	N/A	N	BSL
	7439-97-6	Mercury	mg/kg	0.14	0.25	20/20	18-30-05,LL18-40	N/A	N/A	0.25	0.22	7.8	N/A	N/A	N	BSTV
	7440-02-0	Nickel	mg/kg	27	39.3	20/20	LL17-60-05	N/A	N/A	39.3	33	1,500	N/A	N/A	N	BSTV
	7440-09-7	Potassium	mg/kg	1650	2780	20/20	LL19-10-05	N/A	N/A	2780	2800	N/A	N/A	N/A	N	ENUT
	7782-49-2	Selenium	mg/kg	1.1	1.8	20/20	LL18-20-05	N/A	N/A	1.8	N/A	390	N/A	N/A	N	BSTV
	7440-22-4	Silver	mg/kg	0.74	1.2	20/20	17-60-05,LL18-40	N/A	N/A	1.2	1.7	390	N/A	N/A	N	BSL

Table 2.7
Occurrence, Distribution, and Selection of Chemicals of Potential Concern
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Floodplain Surface Soil
Exposure Area: Floodplain Area 3
Receptor: Trespasser
Receptor Age: Adolescent

Exposure Point	CAS Number	Chemical of Potential Concern	Units	Minimum Detect	Maximum Detect	Detection Frequency	Max Detect Location	Minimum Non-Detect RANGE	Maximum Non-Detect RANGE	Concentration used for Screening [1]	Background Value [2]	Screening Toxicity Value [3,4]	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Final COPC Flag (Y/N)	Rationale for Selection or Deletion [5]
Surface Soil	7440-23-5	Sodium	mg/kg	135	445	7/20	LL17-70-05	572	729	445	710	N/A	N/A	N/A	N	ENUT
	7440-62-2	Vanadium	mg/kg	24.4	36.1	20/20	LL19-10-05	N/A	N/A	36.1	40	390	N/A	N/A	N	BSTV
	7440-66-6	Zinc	mg/kg	195	1210	20/20	LL19-10-05	N/A	N/A	1210	220	5,750 [C]	N/A	N/A	N	BSTV

Notes:
[1] Maximum concentration was used as the screening concentration.
[2] Background values represent Upper Prediction Limits (UPLs) from Goose Lake data. When UPLs could not be calculated due to small sample size, maximum background values were used provided that the maximum concentration was not an outlier.
[3] Screening toxicity value represents the most conservative screening criteria from USEPA Regional Screening Levels, Soil Remediation Objectives from Tiered Approach to Corrective Action Objectives (TACO), or non-TACO or provisional soil remediation objectives.
[4] For original screening toxicity value prior to adjustment for Mixture Rule, refer to Appendix E tables.
[5] Rationale codes:
HYP = Excluded based on hypothesis testing, which indicated site concentrations are not significantly different than background concentrations.
BSL = Excluded based on comparison to background value.
ASTV = Retained because screening concentration is above screening toxicity value.
BSTV = Excluded because screening concentration is below screening toxicity value.
ENUT = Essential nutrient.
cPAH = Retained because constituent is a carcinogenic PAH greater than the background value.
[a] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Kidney; n = 7.
[b] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Body Weight; n = 2.
[c] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Circulatory System; n = 4.
[d] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Gastrointestinal System; n = 3.
[e] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Central Nervous System; n = 2.
Table contains detected constituents only.
ARAR/TBC = Applicable or Relevant and Appropriate Requirement / To Be Considered
COPC = Chemical of Potential Concern
SVOC = semivolatile organic compound
TAL = target analyte list
N/A = Not available
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram

Table 2.8
Occurrence, Distribution, and Selection of Chemicals of Potential Concern
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Floodplain Surface Soil to Groundwater
Exposure Area: Floodplain Area 3
Receptor: Trespasser
Receptor Age: Adolescent

Exposure Point	CAS Number	Chemical of Potential Concern	Units	Minimum Detect	Maximum Detect	Detection Frequency	Max Detect Location	Minimum Non-Detect RANGE		Maximum Non-Detect RANGE	Concentration used for Screening [1]	Background Value [2]	Screening Toxicity Value [3,4]	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Final COPC Flag (Y/N)	Rationale for Selection or Deletion [5]
Surface Soil to Groundwater		**SVOCs**															
	90-10-0	1-Methylnaphthalene	µg/kg	1.7	1.7	1/5	LL16-2EA	6.3	-	27	1.7	N/A	130,000	N/A	N/A	N	BSTV
	91-57-6	2-Methylnaphthalene	µg/kg	2.6	2.7	2/5	LL16-2EA	11	-	27	2.7	N/A	17,000	N/A	N/A	N	BSTV
	83-32-9	Acenaphthene	µg/kg	4	4.2	2/5	LL16-2EA	11	-	27	4.2	N/A	142,500 [c]	N/A	N/A	N	BSTV
	208-96-8	Acenaphthylene	µg/kg	9.7	36	5/5	LL16-2NA	12	-	12	36	N/A	24,000	N/A	N/A	N	BSTV
	120-12-7	Anthracene	µg/kg	8.5	23	5/5	LL16-2NA	N/A	-	N/A	23	N/A	12,000,000	N/A	N/A	N	BSTV
	56-55-3	Benzo(a)anthracene	µg/kg	39	120	5/5	LL16-2NA	N/A	-	N/A	120	170	2,000	N/A	N/A	N	BSTV
	50-32-8	Benzo(a)pyrene	µg/kg	50	140	5/5	LL16-2NA	N/A	-	N/A	140	170	8,000	N/A	N/A	N	BSTV
	205-99-2	Benzo(b)fluoranthene	µg/kg	88	260	5/5	LL16-2NA	N/A	-	N/A	260	250	5,000	N/A	N/A	N	BSTV
	191-24-2	Benzo(g,h,i)perylene	µg/kg	50	140	5/5	LL16-2NA	N/A	-	N/A	140	N/A	27,000,000	N/A	N/A	N	BSTV
	207-08-9	Benzo(k)fluoranthene	µg/kg	29	80	5/5	LL16-2NA	N/A	-	N/A	80	200	49,000	N/A	N/A	N	BSTV
	218-01-9	Chrysene	µg/kg	54	150	5/5	LL16-2NA	N/A	-	N/A	150	250	160,000	N/A	N/A	N	BSTV
	53-70-3	Dibenz(a,h)anthracene	µg/kg	13	34	5/5	LL16-2NA	N/A	-	N/A	34	N/A	2,000	N/A	N/A	N	BSTV
	206-44-0	Fluoranthene	µg/kg	78	220	5/5	LL16-2NA	N/A	-	N/A	220	200	44,792 [b,c,d]	N/A	N/A	N	BSL
	193-39-5	Fluorene	µg/kg	3.9	5.9	3/5	LL16-2SA	11	-	25	5.9	150	140000 [d]	N/A	N/A	N	BSL
	193-39-5	Indeno(1,2,3-cd)pyrene	µg/kg	43	120	5/5	LL16-2NA	N/A	-	N/A	120	150	14,000	N/A	N/A	N	BSTV
	91-20-3	Naphthalene	µg/kg	3	3.1	2/5	LL16-2EA	11	-	27	3.1	N/A	6,000 [g]	N/A	N/A	N	BSTV
	85-01-8	Phenanthrene	µg/kg	24	65	5/5	LL16-2NA	N/A	-	N/A	65	N/A	33,333 [b]	N/A	N/A	N	BSTV
	129-00-0	Pyrene	µg/kg	70	190	5/5	LL16-2NA	N/A	-	N/A	190	250	700,000 [b]	N/A	N/A	N	BSL
		Pesticides															
	50-29-3	4,4'-DDT	µg/kg	6.1	6.1	1/1	LL16-2	N/A	-	N/A	6.1	N/A	8,000 [c]	N/A	N/A	N	BSTV
	319-85-7	Beta-BHC	µg/kg	28	28	1/1	LL16-2	N/A	-	N/A	28	N/A	0.22 [a]	N/A	N/A	Y	ASTV
	1031-07-8	Endosulfan sulfate	µg/kg	14	14	1/1	LL16-2	N/A	-	N/A	14	N/A	3000 [b]	N/A	N/A	N	BSTV
	72-20-8	Endrin	µg/kg	6.1	6.1	1/1	LL16-2	N/A	-	N/A	6.1	N/A	125 [c,e]	N/A	N/A	N	BSTV
	7421-93-4	Endrin aldehyde	µg/kg	13	13	1/1	LL16-2	N/A	-	N/A	13	N/A	50 [c,e]	N/A	N/A	N	BSTV
	53494-70-5	Endrin ketone	µg/kg	24	24	1/1	LL16-2	N/A	-	N/A	24	N/A	50 [c,e]	N/A	N/A	N	BSTV
	5103-74-2	gamma-Chlordane	µg/kg	7.1	7.1	1/1	LL16-2	N/A	-	N/A	7.1	2.9	10,000	N/A	N/A	N	BSTV
	72-43-5	Methoxychlor	µg/kg	82	82	1/1	LL16-2	N/A	-	N/A	82	N/A	160,000	N/A	N/A	N	BSTV
		TAL-Metals and Cyanide															
	7429-90-5	Aluminum	mg/kg	11200	19100	20/20	LL19-1	N/A	-	N/A	19100	19000	55,000 [a]	N/A	N/A	N	BSTV
	7440-36-0	Antimony	mg/kg	1.3	1.4	2/20	LL17-2	6.9	-	8.9	1.4	N/A	1.3 [d]	N/A	N/A	Y	ASTV
	7440-38-2	Arsenic	mg/kg	6.7	8.5	20/20	LL18-3	N/A	-	N/A	8.5	11	30	N/A	N/A	N	BSL
	7440-39-3	Barium	mg/kg	137	206	20/20	LL18-3	N/A	-	N/A	206	210	300 [b]	N/A	N/A	N	BSL
	7440-41-7	Beryllium	mg/kg	0.64	0.98	20/20	LL19-1	N/A	-	N/A	0.98	0.96	250 [f]	N/A	N/A	N	BSTV
	7440-43-9	Cadmium	mg/kg	1.9	8.9	20/20	LL18-3	N/A	-	N/A	8.9	3.3	10 [b]	N/A	N/A	N	BSTV
	7440-70-2	Calcium	mg/kg	15100	31500	20/20	LL16-1	N/A	-	N/A	31500	40000	N/A	N/A	N/A	N	ENUT
	7440-47-3	Chromium	mg/kg	36	55.5	20/20	LL18-3	N/A	-	N/A	55.5	40	32	N/A	N/A	Y	ASTV
	7440-48-4	Cobalt	mg/kg	7.8	11.7	20/20	LL19-1	N/A	-	N/A	11.7	12	0.49 [a]	N/A	N/A	N	BSL
	7440-50-8	Copper	mg/kg	42.1	77.4	20/20	LL16-1	N/A	-	N/A	77.4	52	82,500 [f]	N/A	N/A	N	BSTV
	7439-89-6	Iron	mg/kg	21500	29100	20/20	LL19-1	N/A	-	N/A	29100	32000	640 [a]	N/A	N/A	N	BSL
	7439-92-1	Lead	mg/kg	38.7	73.2	20/20	LL18-3	N/A	-	N/A	73.2	44	107	N/A	N/A	N	BSTV
	7439-95-4	Magnesium	mg/kg	8150	12500	20/20	LL19-6	N/A	-	N/A	12500	15000	N/A	N/A	N/A	N	ENUT
	7439-96-5	Manganese	mg/kg	323	840	20/20	LL16-3	N/A	-	N/A	840	930	57 [a]	N/A	N/A	N	BSL
	7439-97-6	Mercury	mg/kg	0.14	0.25	20/20	LL18-3,LL18-4	N/A	-	N/A	0.25	0.22	6.4	N/A	N/A	N	BSTV
	7440-02-0	Nickel	mg/kg	27	39.3	20/20	LL17-6	N/A	-	N/A	39.3	33	350 [g]	N/A	N/A	N	BSTV
	7440-09-7	Potassium	mg/kg	1650	2780	20/20	LL19-1	N/A	-	N/A	2780	2800	N/A	N/A	N/A	N	ENUT
	7782-49-2	Selenium	mg/kg	1.1	1.8	20/20	LL18-2	N/A	-	N/A	1.8	N/A	3.3	N/A	N/A	N	BSTV

Table 2.8
Occurrence, Distribution, and Selection of Chemicals of Potential Concern
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Floodplain Surface Soil to Groundwater
Exposure Area: Floodplain Area 3
Receptor: Trespasser
Receptor Age: Adolescent

Exposure Point	CAS Number	Chemical of Potential Concern	Units	Minimum Detect	Maximum Detect	Detection Frequency	Max Detect Location	Minimum Non-Detect RANGE		Maximum Non-Detect RANGE	Concentration used for Screening [1]	Background Value [2]	Screening Toxicity Value [3,4]	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Final COPC Flag (Y/N)	Rationale for Selection or Deletion [5]
Surface Soil to Groundwater	7440-22-4	Silver	mg/kg	0.74	1.2	20/20	LL17-6,LL18-4	N/A	-	N/A	1.2	1.7	39	N/A	N/A	N	BSL
	7440-23-5	Sodium	mg/kg	135	445	7/20	LL17-7	572	-	729	445	710	N/A	N/A	N/A	N	ENUT
	7440-62-2	Vanadium	mg/kg	24.4	36.1	20/20	LL19-1	N/A	-	N/A	36.1	40	163 [b]	N/A	N/A	N	BSTV
	7440-66-6	Zinc	mg/kg	195	1210	20/20	LL19-1	N/A	-	N/A	1210	220	4,000 [d]	N/A	N/A	N	BSTV
		Metals-SPLP															
	7440-38-2 (leached)	Arsenic (leached)	mg/L	0.0031	0.0031	1/1	LL16-2	N/A	-	N/A	0.0031	N/A	0.05	N/A	N/A	N	BSTV
	7440-39-3 (leached)	Barium (leached)	mg/L	0.155	0.155	1/1	LL16-2	N/A	-	N/A	0.155	N/A	0.3 [b]	N/A	N/A	N	BSTV
	7440-43-9 (leached)	Cadmium (leached)	mg/L	0.0018	0.0018	1/1	LL16-2	N/A	-	N/A	0.0018	N/A	0.0008 [b]	N/A	N/A	Y	ASTV
	7440-47-3 (leached)	Chromium (leached)	mg/L	0.0049	0.0049	1/1	LL16-2	N/A	-	N/A	0.0049	N/A	0.1	N/A	N/A	N	BSTV
	7439-92-1 (leached)	Lead (leached)	mg/L	0.0151	0.0151	1/1	LL16-2	N/A	-	N/A	0.0151	N/A	0.0075	N/A	N/A	Y	ASTV
		Miscellaneous-SPLP															
	16887-00-6	Chloride	mg/L	0.95	0.95	1/1	LL16-2	N/A	-	N/A	0.95	N/A	200	N/A	N/A	N	BSTV
	16984-48-8	Fluoride	mg/L	0.915	0.915	1/1	LL16-2	N/A	-	N/A	0.915	N/A	1 [f]	N/A	N/A	N	BSTV
	14797-55-8	Nitrate as N	mg/L	0.465	0.465	1/1	LL16-2	N/A	-	N/A	0.465	N/A	2.5 [d]	N/A	N/A	N	BSTV
	14808-79-8	Sulfate	mg/L	11.6	11.6	1/1	LL16-2	N/A	-	N/A	11.6	N/A	400	N/A	N/A	N	BSTV

Notes:
[1] Maximum concentration was used as the screening concentration.
[2] Background values represent Upper Prediction Limits (UPLs) from Goose Lake data. When UPLs could not be calculated due to small sample size, maximum background values were used provided that the maximum concentration was not an outlier.
[3] Screening toxicity value represents the most conservative screening criteria from Tiered Approach to Corrective Action Objectives (TACO) soil remediation objectives for the soil component of the groundwater ingestion exposure route (Class I), and non-TACO or provisional soil remediation objectives for the soil component of the groundwater ingestion exposure route (Class I).
[4] For original screening toxicity value prior to adjustment for Mixture Rule, refer to Appendix E tables.
[5] Rationale codes:
BSL = Excluded based on comparison to background value.
ASTV = Retained because screening concentration is above screening toxicity value.
BSTV = Excluded because screening concentration is below screening toxicity value.
NSTV = No screening toxicity value available. Constituent is not site-related and has no associated toxicity value for quantitative evaluation; therefore, this constituent is not retained as a COPC.
ENUT = Essential nutrient.
cPAH = Retained because constituent is a carcinogenic PAH greater than the background value.
[a] When TACO values were unavailable, the USEPA Regional Screening Level (RSL) Risk-Based Soil Screening Levels (SSLs) were used as the screening values.
[b] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Kidney; n = 6.
[c] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Liver; n =4.
[d] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Circulatory System; n = 4.
[e] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Central Nervous System; n = 2.
[f] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Gastrointestinal System; n = 4.
[g] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Body Weight; n = 2.
Table contains detected constituents only.
ARAR/TBC = Applicable or Relevant and Appropriate Requirement / To Be Considered
COPC = Chemical of Potential Concern
SVOC = semivolatile organic compound
TAL = target analyte list
SPLP = synthetic precipitation leaching procedure
N/A = Not available
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
mg/L = milligram per liter

Table 2.9
Occurrence, Distribution, and Selection of Chemicals of Potential Concern
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Floodplain Surface and Subsurface Soil
Exposure Area: Floodplain Area 1B
Receptor: Utility Maintenance Worker
Receptor Age: Adult

Exposure Point	CAS Number	Chemical of Potential Concern	Units	Minimum Detect	Maximum Detect	Detection Frequency	Max Detect Location	Minimum Non-Detect RANGE		Maximum Non-Detect RANGE	Concentration used for Screening [1]	Background Value [2]	Screening Toxicity Value [3,4]	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Final COPC Flag (Y/N)	Rationale for Selection or Deletion [5]
Surface and Subsurface Soil		**SVOCs**															
	120-12-7	Anthracene	µg/kg	170	170	1/6	LL7-2	510	-	1200	170	N/A	17,000,000	N/A	N/A	N	BSTV
	56-55-3	Benzo(a)anthracene	µg/kg	220	760	3/6	LL7-2	510	-	1200	760	410	150	N/A	N/A	Y	ASTV
	50-32-8	Benzo(a)pyrene	µg/kg	220	950	3/6	LL7-2	510	-	1200	950	410	15	N/A	N/A	Y	ASTV
	205-99-2	Benzo(b)fluoranthene	µg/kg	340	1200	3/6	LL7-2	510	-	1200	1200	250	150	N/A	N/A	Y	ASTV
	191-24-2	Benzo(g,h,i)perylene	µg/kg	170	370	2/6	LL7-2	510	-	1200	370	230	150	N/A	N/A	Y	ASTV
	207-08-9	Benzo(k)fluoranthene	µg/kg	230	900	3/6	LL7-2	510	-	1200	900	230	1,500	N/A	N/A	Y	cPAH
	218-01-9	Chrysene	µg/kg	110	1300	4/6	LL7-2	510	-	1200	1300	260	15,000	N/A	N/A	Y	cPAH
	53-70-3	Dibenz(a,h)anthracene	µg/kg	350	350	1/6	LL7-2	510	-	1200	350	N/A	15	N/A	N/A	Y	ASTV
	206-44-0	Fluoranthene	µg/kg	100	1800	6/6	LL7-2	N/A	-	N/A	1800	230	2,300,000	N/A	N/A	N	BSTV
	86-73-7	Fluorene	µg/kg	150	150	1/6	LL7-2	510	-	1200	150	N/A	2,300,000	N/A	N/A	N	BSTV
	193-39-5	Indeno(1,2,3-cd)pyrene	µg/kg	220	650	2/6	LL7-2	510	-	1200	650	410	150	N/A	N/A	Y	ASTV
	91-20-3	Naphthalene	µg/kg	340	340	1/6	LL7-2	510	-	1200	340	N/A	900 [e]	N/A	N/A	N	BSTV
	85-01-8	Phenanthrene	µg/kg	240	1600	3/6	LL7-2	510	-	1200	1600	N/A	383,33 [a]	N/A	N/A	N	BSTV
	129-00-0	Pyrene	µg/kg	120	1500	5/6	LL7-2	1200	-	1200	1500	270	283,33 [a]	N/A	N/A	N	BSTV
		PCBs															
	11097-69-1	Aroclor 1254	µg/kg	46	150	3/5	LL7-4	51	-	55	150	64	220	N/A	N/A	N	BSTV
		Pesticides															
	72-54-8	4,4'-DDD	µg/kg	1.3	5.8	2/6	LL7-2	5.1	-	12	5.8	4.1	2,000	N/A	N/A	N	BSTV
	72-55-9	4,4'-DDE	µg/kg	2.1	2.1	1/6	LL5-1	3.3	-	12	2.1	4.3	1,400	N/A	N/A	N	BSTV
	50-29-3	4,4'-DDT	µg/kg	2.5	10	4/6	LL7-2	5.1	-	6.5	10	N/A	1,700	N/A	N/A	N	BSTV
	5103-71-9	Alpha-Chlordane	µg/kg	1.1	1.1	1/6	LL5-1	1.7	-	6.3	1.1	2.7	1,600	N/A	N/A	N	BSTV
	60-57-1	Dieldrin	µg/kg	3.2	8.8	3/6	LL7-4	5.1	-	5.5	8.8	5.3	30	N/A	N/A	N	BSTV
	72-20-8	Endrin	µg/kg	4.5	4.5	1/6	LL7-2	5.1	-	12	4.5	N/A	18,000	N/A	N/A	N	BSTV
	53494-70-5	Endrin ketone	µg/kg	5.7	6.4	2/6	LL7-2	5.1	-	12	6.4	N/A	18,000	N/A	N/A	N	BSTV
	72-43-5	Methoxychlor	µg/kg	20	20	1/6	LL7-2	26	-	63	20	N/A	310,000	N/A	N/A	N	BSTV
		TAL-Metals and Cyanide															
	7429-90-5	Aluminum	mg/kg	5800	19700	24/24	LL5-1	N/A	-	N/A	19700	19000	77,000	N/A	N/A	N	HYP
	7440-36-0	Antimony	mg/kg	0.67	5.8	7/21	LL7-2	9.1	-	890	5.8	N/A	8 [c]	N/A	N/A	N	BSTV
	7440-38-2	Arsenic	mg/kg	5.4	390	24/24	LL7-1	N/A	-	N/A	390	13	0.39	N/A	N/A	Y	ASTV
	7440-39-3	Barium	mg/kg	295	8000	24/24	LL7-1	N/A	-	N/A	8000	220	917 [a]	N/A	N/A	Y	ASTV
	7440-41-7	Beryllium	mg/kg	0.38	1	24/24	LL5-1,LL6-2	N/A	-	N/A	1	0.92	53 [d]	N/A	N/A	N	BSTV
	7440-43-9	Cadmium	mg/kg	2.8	2490	24/24	LL7-1	N/A	-	N/A	2490	6.0	70	N/A	N/A	Y	ASTV
	7440-70-2	Calcium	mg/kg	7410	175000	24/24	LL6-1	N/A	-	N/A	175000	36000	N/A	N/A	N/A	N	ENUT
	7440-47-3	Chromium	mg/kg	10.7	56.2	21/24	LL7-1	15.6	-	31.9	56.2	58	230	N/A	N/A	N	BSL
	7440-48-4	Cobalt	mg/kg	6.2	35.6	24/24	LL7-1	N/A	-	N/A	35.6	12	23	N/A	N/A	Y	ASTV
	7440-50-8	Copper	mg/kg	14.7	3580	24/24	LL7-2	N/A	-	N/A	3580	63	967 [d]	N/A	N/A	Y	ASTV
	57-12-5	Cyanide	mg/kg	0.94	31.9	3/6	LL7-2	3.9	-	9.3	31.9	3.1	1,600	N/A	N/A	N	BSTV
	7439-89-6	Iron	mg/kg	18000	66300	24/24	LL7-2	N/A	-	N/A	66300	32000	18,333 [d]	N/A	N/A	Y	ASTV
	7439-92-1	Lead	mg/kg	14.8	12500	24/24	LL7-1	N/A	-	N/A	12500	61	400	N/A	N/A	Y	ASTV
	7439-95-4	Magnesium	mg/kg	3770	14900	24/24	LL7-3	N/A	-	N/A	14900	14000	N/A	N/A	N/A	N	ENUT
	7439-96-5	Manganese	mg/kg	240	1630	24/24	LL7-2	N/A	-	N/A	1630	970	800 [b]	N/A	N/A	Y	ASTV
	7439-97-6	Mercury	mg/kg	0.11	16.3	22/24	LL7-1	0.15	-	0.18	16.3	0.34	7.8	N/A	N/A	Y	ASTV
	7440-02-0	Nickel	mg/kg	14.3	34.8	24/24	LL5-1	N/A	-	N/A	34.8	39	1,500	N/A	N/A	N	HYP
	7440-09-7	Potassium	mg/kg	686	2280	24/24	LL5-1	N/A	-	N/A	2280	2600	N/A	N/A	N/A	N	ENUT
	7782-49-2	Selenium	mg/kg	1.3	42.8	24/24	LL7-1	N/A	-	N/A	42.8	N/A	390	N/A	N/A	N	BSTV
	7440-22-4	Silver	mg/kg	0.13	68.7	24/24	LL7-1	1.7	-	1.7	68.7	1.6	390	N/A	N/A	N	BSTV
	7440-23-5	Sodium	mg/kg	339	7150	10/24	LL7-2	635	-	16000	7150	710	N/A	N/A	N/A	N	ENUT
	7440-28-0	Thallium	mg/kg	0.58	2.7	9/24	LL7-2	3.2	-	9.3	2.7	3.0	6.3	N/A	N/A	N	BSL
	7440-62-2	Vanadium	mg/kg	18.7	37.3	24/24	LL7-1	N/A	-	N/A	37.3	39	390	N/A	N/A	N	BSTV
	7440-66-6	Zinc	mg/kg	208	181000	24/24	LL7-2	N/A	-	N/A	181000	280	5,750 [c]	N/A	N/A	Y	ASTV

Table 2.9
Occurrence, Distribution, and Selection of Chemicals of Potential Concern
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Floodplain Surface and Subsurface Soil
Exposure Area: Floodplain Area 1B
Receptor: Utility Maintenance Worker
Receptor Age: Adult

Notes:
[1] Maximum concentration was used as the screening concentration.
[2] Background values represent Upper Prediction Limits (UPLs) from Goose Lake data. When UPLs could not be calculated due to small sample size, maximum background values were used provided that the maximum concentration was not an outlier.
[3] Screening toxicity value represents the most conservative screening criteria from USEPA Regional Screening Levels, Soil Remediation Objectives from Tiered Approach to Corrective Action Objectives (TACO), or non-TACO or provisional soil remediation objectives.
[4] For original screening toxicity value prior to adjustment for Mixture Rule, refer to Appendix E tables.
[5] Rationale codes:
HYP = Excluded based on hypothesis testing, which indicated site concentrations are not significantly different than background concentrations.
BSL = Excluded based on comparison to background value.
ASTV = Retained because screening concentration is above screening toxicity value.
BSTV = Excluded because screening concentration is below screening toxicity value.
ENUT = Essential nutrient.
cPAH = Retained because constituent is a carcinogenic PAH greater than the background value.
[a] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Kidney; n =6.
[b] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Central Nervous System; n = 2.
[c] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Circulatory System; n = 4.
[d] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Gastrointestinal System; n = 3.
[e] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Body Weight; n = 2.
Table contains detected constituents only.
ARAR/TBC = Applicable or Relevant and Appropriate Requirement / To Be Considered
COPC = Chemical of Potential Concern
PCB = polychlorinated biphenyl
SVOC = semivolatile organic compound
TAL = target analyte list
N/A = Not available
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram

Table 2.10
Occurrence, Distribution, and Selection of Chemicals of Potential Concern
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Floodplain Surface and Subsurface Soil to Groundwater
Exposure Area: Floodplain Area 1B
Receptor: Utility Maintenance Worker
Receptor Age: Adult

Exposure Point	CAS Number	Chemical of Potential Concern	Units	Minimum Detect	Maximum Detect	Detection Frequency	Max Detect Location	Minimum Non-Detect RANGE		Maximum Non-Detect RANGE	Concentration used for Screening [1]	Background Value [2]	Screening Toxicity Value [3,4]	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Final COPC Flag (Y/N)	Rationale for Selection or Deletion [5]
Surface and Subsurface Soil to Groundwater		**SVOCs**															
	120-12-7	Anthracene	µg/kg	170	170	1/6	LL7-2	510	-	1200	170	N/A	12,000,000	N/A	N/A	N	BSTV
	56-55-3	Benzo(a)anthracene	µg/kg	220	760	3/6	LL7-2	510	-	1200	760	410	2,000	N/A	N/A	N	BSTV
	50-32-8	Benzo(a)pyrene	µg/kg	220	950	3/6	LL7-2	510	-	1200	950	410	8,000	N/A	N/A	N	BSTV
	205-99-2	Benzo(b)fluoranthene	µg/kg	340	1200	3/6	LL7-2	510	-	1200	1200	250	5,000	N/A	N/A	N	BSTV
	191-24-2	Benzo(g,h,i)perylene	µg/kg	170	370	2/6	LL7-2	510	-	1200	370	230	27,000,000	N/A	N/A	N	BSTV
	207-08-9	Benzo(k)fluoranthene	µg/kg	230	900	3/6	LL7-2	510	-	1200	900	230	49,000	N/A	N/A	N	BSTV
	218-01-9	Chrysene	µg/kg	110	1300	4/6	LL7-2	510	-	1200	1300	260	160,000	N/A	N/A	N	BSTV
	53-70-3	Dibenz(a,h)anthracene	µg/kg	350	350	1/6	LL7-2	510	-	1200	350	N/A	2,000	N/A	N/A	N	BSTV
	206-44-0	Fluoranthene	µg/kg	100	1800	6/6	LL7-2	N/A	-	N/A	1800	230	59,722 [b,c,d]	N/A	N/A	N	BSTV
	86-73-7	Fluorene	µg/kg	150	150	1/6	LL7-2	510	-	1200	150	N/A	140,000 [d]	N/A	N/A	N	BSTV
	193-39-5	Indeno(1,2,3-cd)pyrene	µg/kg	220	650	2/6	LL7-2	510	-	1200	650	410	14,000	N/A	N/A	N	BSTV
	91-20-3	Naphthalene	µg/kg	340	340	1/6	LL7-2	510	-	1200	340	N/A	6,000 [e]	N/A	N/A	N	BSTV
	85-01-8	Phenanthrene	µg/kg	240	1600	3/6	LL7-2	510	-	1200	1600	N/A	33,333 [b]	N/A	N/A	N	BSTV
	129-00-0	Pyrene	µg/kg	120	1500	5/6	LL7-2	1200	-	1200	1500	270	700,000 [d]	N/A	N/A	N	BSTV
		PCBs															
	11097-69-1	Aroclor 1254	µg/kg	46	150	3/5	LL7-4	51	-	55	150	64	8.8 [a]	N/A	N/A	Y	ASTV
		Pesticides															
	72-54-8	4,4'-DDD	µg/kg	1.3	5.8	2/6	LL7-2	5.1	-	12	5.8	4.1	16,000	N/A	N/A	N	BSTV
	72-55-9	4,4'-DDE	µg/kg	2.1	2.1	1/6	LL5-1	3.3	-	12	2.1	4.3	54,000	N/A	N/A	N	BSTV
	50-29-3	4,4'-DDT	µg/kg	2.5	10	4/6	LL7-2	5.1	-	6.5	10	N/A	10,667 [c,j]	N/A	N/A	N	BSTV
	NA	Alpha-Chlordane	µg/kg	1.1	1.1	1/6	LL5-1	1.7	-	6.3	1.1	2.7	10,000	N/A	N/A	N	BSTV
	60-57-1	Dieldrin	µg/kg	3.2	8.8	3/6	LL7-4	5.1	-	5.5	8.8	5.3	4	N/A	N/A	Y	ASTV
	72-20-8	Endrin	µg/kg	4.5	4.5	1/6	LL7-2	5.1	-	12	4.5	N/A	167 [c,j]	N/A	N/A	N	BSTV
	53494-70-5	Endrin ketone	µg/kg	5.7	6.4	2/6	LL7-2	5.1	-	12	6.4	N/A	1000	N/A	N/A	N	BSTV
	72-43-5	Methoxychlor	µg/kg	20	20	1/6	LL7-2	26	-	63	20	N/A	160,000	N/A	N/A	N	BSTV
		TAL-Metals and Cyanide															
	7429-90-5	Aluminum	mg/kg	5800	19700	24/24	LL5-1	N/A	-	N/A	19700	19000	55,000 [a]	N/A	N/A	N	HYP
	7440-36-0	Antimony	mg/kg	0.67	5.8	7/21	LL7-2	9.1	-	890	5.8	N/A	1.3 [d]	N/A	N/A	Y	ASTV
	7440-38-2	Arsenic	mg/kg	5.4	390	24/24	LL7-1	N/A	-	N/A	390	13	30	N/A	N/A	Y	ASTV
	7440-39-3	Barium	mg/kg	295	8000	24/24	LL7-1	N/A	-	N/A	8000	220	360 [d]	N/A	N/A	Y	ASTV
	7440-41-7	Beryllium	mg/kg	0.38	1	24/24	LL5-1,LL6-2	N/A	-	N/A	1	0.92	250 [f]	N/A	N/A	N	BSTV
	7440-43-9	Cadmium	mg/kg	2.8	2490	24/24	LL7-1	N/A	-	N/A	2490	6.0	10 [b]	N/A	N/A	Y	ASTV
	7440-70-2	Calcium	mg/kg	7410	175000	24/24	LL6-1	N/A	-	N/A	175000	36000	N/A	N/A	N/A	N	ENUT
	7440-47-3	Chromium	mg/kg	10.7	56.2	21/24	LL7-1	15.6	-	31.9	56.2	58	32	N/A	N/A	N	BSL
	7440-48-4	Cobalt	mg/kg	6.2	35.6	24/24	LL7-1	N/A	-	N/A	35.6	12	0.49 [a]	N/A	N/A	Y	ASTV
	7440-50-8	Copper	mg/kg	14.7	3580	24/24	LL7-2	N/A	-	N/A	3580	63	82,500 [f]	N/A	N/A	N	BSTV
	57-12-5	Cyanide	mg/kg	0.94	31.9	3/6	LL7-2	3.9	-	9.3	31.9	3.1	40	N/A	N/A	Y	ASTV
	7439-89-6	Iron	mg/kg	18000	66300	24/24	LL7-2	N/A	-	N/A	66300	32000	640 [a]	N/A	N/A	Y	ASTV
	7439-92-1	Lead	mg/kg	14.8	12500	24/24	LL7-1	N/A	-	N/A	12500	61	107	N/A	N/A	Y	ASTV
	7439-95-4	Magnesium	mg/kg	3770	14900	24/24	LL7-3	N/A	-	N/A	14900	14000	N/A	N/A	N/A	N	ENUT
	7439-96-5	Manganese	mg/kg	240	1630	24/24	LL7-2	N/A	-	N/A	1630	970	57 [a]	N/A	N/A	Y	ASTV
	7439-97-6	Mercury	mg/kg	0.11	16.3	22/24	LL7-1	0.15	-	0.18	16.3	0.34	3 [g]	N/A	N/A	Y	ASTV
	7440-02-0	Nickel	mg/kg	14.3	34.8	24/24	LL5-1	N/A	-	N/A	34.8	39	350 [e]	N/A	N/A	N	BSL
	7440-09-7	Potassium	mg/kg	686	2280	24/24	LL5-1	N/A	-	N/A	2280	2600	N/A	N/A	N/A	N	ENUT
	7782-49-2	Selenium	mg/kg	1.3	42.8	24/24	LL7-1	N/A	-	N/A	42.8	N/A	3.3	N/A	N/A	Y	ASTV
	7440-22-4	Silver	mg/kg	0.13	68.7	24/24	LL7-1	1.7	-	1.7	68.7	1.6	39	N/A	N/A	Y	ASTV
	7440-23-5	Sodium	mg/kg	339	7150	10/24	LL7-2	635	-	16000	7150	710	N/A	N/A	N/A	N	ENUT
	7440-28-0	Thallium	mg/kg	0.58	2.7	9/24	LL7-2	3.2	-	9.3	2.7	3.0	3.4	N/A	N/A	N	BSL
	7440-62-2	Vanadium	mg/kg	18.7	37.3	24/24	LL7-1	N/A	-	N/A	37.3	39	163 [b]	N/A	N/A	N	BSTV
	7440-66-6	Zinc	mg/kg	208	181000	24/24	LL7-2	N/A	-	N/A	181000	280	4,000 [d]	N/A	N/A	Y	ASTV

Table 2.10
Occurrence, Distribution, and Selection of Chemicals of Potential Concern
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Floodplain Surface and Subsurface Soil to Groundwater
Exposure Area: Floodplain Area 1B
Receptor: Utility Maintenance Worker
Receptor Age: Adult

Exposure Point	CAS Number	Chemical of Potential Concern	Units	Minimum Detect	Maximum Detect	Detection Frequency	Max Detect Location	Minimum Non-Detect RANGE		Maximum Non-Detect RANGE	Concentration used for Screening [1]	Background Value [2]	Screening Toxicity Value [3,4]	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Final COPC Flag (Y/N)	Rationale for Selection or Deletion [5]
Surface and		**Metals-SPLP**															
Subsurface	7440-38-2 (leached)	Arsenic (leached)	mg/L	0.0044	0.0086	3/6	LL7-4	0.0021	-	0.0028	0.0086	N/A	0.05	N/A	N/A	N	BSTV
Soil to	7440-39-3 (leached)	Barium (leached)	mg/L	0.0475	0.172	6/6	LL7-2	N/A	-	N/A	0.172	N/A	0.3 [b]	N/A	N/A	N	BSTV
Groundwater	7440-43-9 (leached)	Cadmium (leached)	mg/L	0.00093	0.181	4/6	LL7-2	0.005	-	0.005	0.181	N/A	0.0008 [b]	N/A	N/A	Y	ASTV
	7440-47-3 (leached)	Chromium (leached)	mg/L	0.00097	0.0045	3/6	LL7-2	0.01	-	0.01	0.0045	N/A	0.1	N/A	N/A	N	BSTV
	7439-92-1 (leached)	Lead (leached)	mg/L	0.0168	0.0367	4/6	LL7-4	0.0062	-	0.0068	0.0367	N/A	0.0075	N/A	N/A	Y	ASTV
	7439-97-6 (leached)	Mercury (leached)	mg/L	0.00014	0.00016	3/6	LL7-4	0.0001	-	0.0001	0.00016	N/A	0.001 [g]	N/A	N/A	N	BSTV
		Miscellaneous-SPLP															
	7726-95-6	Bromide	mg/L	3.01	3.01	1/6	LL7-4	0.1	-	0.1	3.01	N/A	N/A	N/A	N/A	N	NSTV [i]
	16887-00-6	Chloride	mg/L	0.545	2.4	6/6	LL7-4	N/A	-	N/A	2.4	N/A	200	N/A	N/A	N	BSTV
	16984-48-8	Fluoride	mg/L	0.295	3.31	6/6	LL7-2	N/A	-	N/A	3.31	N/A	1 [f]	N/A	N/A	Y	ASTV
	14797-55-8	Nitrate as N	mg/L	0.05	0.085	3/6	LL5-1	0.05	-	0.05	0.085	N/A	2.5 [d]	N/A	N/A	N	BSTV
	98059-61-1	Phosphate	mg/L	0.565	0.815	2/6	LL7-2	0.05	-	0.05	0.815	N/A	N/A	N/A	N/A	N	NSTV [j]
	14808-79-8	Sulfate	mg/L	11.1	52.8	6/6	LL7-4	N/A	-	N/A	52.8	N/A	400	N/A	N/A	N	BSTV

Notes:
[1] Maximum concentration was used as the screening concentration.
[2] Background values represent Upper Prediction Limits (UPLs) from Goose Lake data. When UPLs could not be calculated due to small sample size, maximum background values were used provided that the maximum concentration was not an outlier.
[3] Screening toxicity value represents the most conservative screening criteria from Tiered Approach to Corrective Action Objectives (TACO) soil remediation objectives for the soil component of the groundwater ingestion exposure route (Class I), and non-TACO or provisional soil remediation objectives for the soil component of the groundwater ingestion exposure route (Class I).
[4] For original screening toxicity value prior to adjustment for Mixture Rule, refer to Appendix E tables.
[5] Rationale codes:
HYP = Excluded based on hypothesis testing, which indicated site concentrations are not significantly different than background concentrations.
BSL = Excluded based on comparison to background value.
ASTV = Retained because screening concentration is above screening toxicity value.
BSTV = Excluded because screening concentration is below screening toxicity value.
NSTV = No screening toxicity value available. Constituent has no associated toxicity value for quantitative evaluation; therefore, this constituent is not retained as a COPC.
ENUT = Essential nutrient.
[a] When TACO values were unavailable, the USEPA Regional Screening Level (RSL) Risk-Based Soil Screening Levels (SSLs) were used as the screening values.
[b] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Kidney; n = 6.
[c] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Liver; n = 3.
[d] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Circulatory System; n = 4.
[e] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Body Weight; n = 2.
[f] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Gastrointestinal System; n = 4.
[g] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Immune System; n = 2.
[h] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Central Nervous System; n = 2.
[i] Constituent is not site-related and has no associated toxicity value for quantitative evaluation; therefore this constituent is not retained as a COPC.
[j] Constituent has no associated toxicity value for quantitative evaluation; therefore this constituent is not retained as a COPC.
Table contains detected constituents only.
ARAR/TBC = Applicable or Relevant and Appropriate Requirement / To Be Considered
COPC = Chemical of Potential Concern
PCB = polychlorinated biphenyl
SVOC = semivolatile organic compound
TAL = target analyte list
SPLP = synthetic precipitation leaching procedure
N/A = Not available
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
mg/L = milligram per liter

Table 2.11
Occurrence, Distribution, and Selection of Chemicals of Potential Concern
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Floodplain Surface and Subsurface Soil
Exposure Area: Floodplain Area 2
Receptor: Wildlife Worker and Hunter
Receptor Age: Adult

Exposure Point	CAS Number	Chemical of Potential Concern	Units	Minimum Detect	Maximum Detect	Detection Frequency	Max Detect Location	Minimum Non-Detect RANGE		Maximum Non-Detect RANGE	Concentration used for Screening [1]	Background Value [2]	Screening Toxicity Value [3,4]	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Final COPC Flag (Y/N)	Rationale for Selection or Deletion [5]
Surface and		**SVOCs**															
Subsurface	56-55-3	Benzo(a)anthracene	µg/kg	120	140	2/6	LL1-105-20	390	-	550	140	410	150	N/A	N/A	Y	cPAH
Soil	50-32-8	Benzo(a)pyrene	µg/kg	170	170	2/6	LL1-10-05,LL1-105-20	390	-	550	170	410	15	N/A	N/A	Y	ASTV
	205-99-2	Benzo(b)fluoranthene	µg/kg	170	170	2/6	LL1-10-05,LL1-105-20	390	-	550	170	250	150	N/A	N/A	Y	ASTV
	191-24-2	Benzo(g,h,i)perylene	µg/kg	120	130	2/6	LL1-105-20	390	-	550	130	230	150	N/A	N/A	N	BSL
	207-08-9	Benzo(k)fluoranthene	µg/kg	160	160	2/6	LL1-10-05,LL1-105-20	390	-	550	160	230	1,500	N/A	N/A	Y	cPAH
	218-01-9	Chrysene	µg/kg	110	180	3/6	LL1-105-20	390	-	510	180	260	15,000	N/A	N/A	Y	cPAH
	206-44-0	Fluoranthene	µg/kg	100	230	4/6	LL1-10-05	390	-	400	230	230	2,300,000	N/A	N/A	N	BSTV
	193-39-5	Indeno(1,2,3-cd)pyrene	µg/kg	150	150	2/6	LL1-10-05,LL1-105-20	390	-	550	150	410	150	N/A	N/A	Y	cPAH
	129-00-0	Pyrene	µg/kg	120	200	4/6	LL1-10-05,LL1-105-20	390	-	400	200	270	340,000 [b]	N/A	N/A	N	BSTV
		Pesticides															
	72-54-8	4,4'-DDD	µg/kg	1.3	1.5	2/6	LL1-105-20	3.9	-	5.3	1.5	4.1	2,000	N/A	N/A	N	BSTV
	72-55-9	4,4'-DDE	µg/kg	1.1	2.2	4/6	LL4-305-20	4.9	-	5.1	2.2	4.3	1,400	N/A	N/A	N	BSTV
	50-29-3	4,4'-DDT	µg/kg	1.4	2.7	3/6	LL1-105-20	3.9	-	5.3	2.7	N/A	1,700	N/A	N/A	N	BSTV
	5103-71-9	Alpha-Chlordane	µg/kg	0.69	1.1	3/6	LL5-10-05	2	-	2.7	1.1	2.7	1,600	N/A	N/A	N	BSTV
	60-57-1	Dieldrin	µg/kg	0.84	2.5	4/6	LL1-105-20	5.1	-	5.5	2.5	5.3	30	N/A	N/A	N	BSTV
	7421-93-4	Endrin aldehyde	µg/kg	1.4	1.4	1/6	LL1-10-05	3.9	-	5.5	1.4	N/A	18,000	N/A	N/A	N	BSTV
	5103-74-2	gamma-Chlordane	µg/kg	0.9	0.9	1/6	LL4-305-20	2	-	2.8	0.9	2.8	1,600	N/A	N/A	N	BSTV
	1024-57-3	Heptachlor epoxide	µg/kg	0.8	0.8	1/6	LL1-105-20	2	-	2.8	0.8	N/A	53	N/A	N/A	N	BSTV
		TAL-Metals and Cyanide															
	7429-90-5	Aluminum	mg/kg	4930	20900	48/48	LL3-205-20	N/A	-	N/A	20900	19000	77,000	N/A	N/A	N	BSTV
	7440-38-2	Arsenic	mg/kg	4.2	28.2	48/48	LL5-30-05	N/A	-	N/A	28.2	13	0.39	N/A	N/A	Y	ASTV
	7440-39-3	Barium	mg/kg	139	1890	48/48	LL4-205-20	N/A	-	N/A	1890	220	1,100 [b]	N/A	N/A	Y	ASTV
	7440-41-7	Beryllium	mg/kg	0.29	1.1	48/48	LL3-205-20	N/A	-	N/A	1.1	0.92	53 [c]	N/A	N/A	N	BSTV
	7440-43-9	Cadmium	mg/kg	1.5	33.5	48/48	LL4-105-20	N/A	-	N/A	33.5	6.0	70	N/A	N/A	N	BSTV
	7440-70-2	Calcium	mg/kg	7410	45200	48/48	LL1-10-05	N/A	-	N/A	45200	36000	N/A	N/A	N/A	N	ENUT
	7440-47-3	Chromium	mg/kg	9	85.5	48/48	LL3-205-20	N/A	-	N/A	85.5	58	230	N/A	N/A	N	BSTV
	7440-48-4	Cobalt	mg/kg	5.1	14.1	48/48	LL3-205-20	N/A	-	N/A	14.1	12	23	N/A	N/A	N	BSTV
	7440-50-8	Copper	mg/kg	16.8	99.1	48/48	LL5-30-05	N/A	-	N/A	99.1	63	967 [c]	N/A	N/A	N	BSTV
	7439-89-6	Iron	mg/kg	9870	42800	48/48	LL5-305-20	N/A	-	N/A	42800	32000	18,330 [c]	N/A	N/A	Y	ASTV
	7439-92-1	Lead	mg/kg	22.3	189	48/48	LL5-10-05	N/A	-	N/A	189	61	400	N/A	N/A	N	BSTV
	7439-95-4	Magnesium	mg/kg	4080	15600	48/48	LL2-105-20	N/A	-	N/A	15600	14000	N/A	N/A	N/A	N	ENUT
	7439-96-5	Manganese	mg/kg	276	2070	48/48	LL2-205-20	N/A	-	N/A	2070	970	1,600	N/A	N/A	Y	ASTV
	7439-97-6	Mercury	mg/kg	0.058	0.76	42/48	LL1-405-20	0.11	-	0.15	0.76	0.34	7.8	N/A	N/A	N	BSTV
	7440-02-0	Nickel	mg/kg	10.7	55.2	48/48	LL3-205-20	N/A	-	N/A	55.2	39	1,500	N/A	N/A	N	BSTV
	7440-09-7	Potassium	mg/kg	598	2780	48/48	LL2-10-05	N/A	-	N/A	2780	2600	N/A	N/A	N/A	N	ENUT
	7782-49-2	Selenium	mg/kg	0.49	3	48/48	LL5-30-05	N/A	-	N/A	3	N/A	390	N/A	N/A	N	BSTV
	7440-22-4	Silver	mg/kg	0.13	2	48/48	LL3-205-20	N/A	-	N/A	2	1.6	390	N/A	N/A	N	BSTV
	7440-23-5	Sodium	mg/kg	208	703	19/48	LL20-30-05	576	-	802	703	710	N/A	N/A	N/A	N	ENUT
	7440-62-2	Vanadium	mg/kg	15.1	40.3	48/48	LL3-205-20	N/A	-	N/A	40.3	39	390	N/A	N/A	N	BSTV
	7440-66-6	Zinc	mg/kg	153	2480	48/48	LL5-30-05	N/A	-	N/A	2480	280	11,500 [a]	N/A	N/A	N	BSTV

Table 2.11
Occurrence, Distribution, and Selection of Chemicals of Potential Concern
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Floodplain Surface and Subsurface Soil
Exposure Area: Floodplain Area 2
Receptor: Wildlife Worker and Hunter
Receptor Age: Adult

Notes:
[1] Maximum concentration was used as the screening concentration.
[2] Background values represent Upper Prediction Limits (UPLs) from Goose Lake data. When UPLs could not be calculated due to small sample size, maximum background values were used provided that the maximum concentration was not an outlier.
[3] Screening toxicity value represents the most conservative screening criteria from USEPA Regional Screening Levels, Soil Remediation Objectives from Tiered Approach to Corrective Action Objectives (TACO), or non-TACO or provisional soil remediation objectives.
[4] For original screening toxicity value prior to adjustment for Mixture Rule, refer to Appendix E tables.
[5] Rationale codes:
BSL = Excluded based on comparison to background value.
ASTV = Retained because screening concentration is above screening toxicity value.
BSTV = Excluded because screening concentration is below screening toxicity value.
ENUT = Essential nutrient.
[a] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Circulatory System; n = 2.
[b] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Kidney; n = 5.
[c] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Gastrointestinal System; n = 3.
Table contains detected constituents only.
ARAR/TBC = Applicable or Relevant and Appropriate Requirement / To Be Considered
COPC = Chemical of Potential Concern
SVOC = semivolatile organic compound
TAL = target analyte list
N/A = Not available
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram

Table 2.12
Occurrence, Distribution, and Selection of Chemicals of Potential Concern
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Floodplain Surface and Subsurface Soil to Groundwater
Exposure Area: Floodplain Area 2
Receptor: Wildlife Worker and Hunter
Receptor Age: Adult

Exposure Point	CAS Number	Chemical of Potential Concern	Units	Minimum Detect	Maximum Detect	Detection Frequency	Max Detect Location	Minimum Non-Detect RANGE		Maximum Non-Detect RANGE	Concentration used for Screening [1]	Background Value [2]	Screening Toxicity Value [3,4]	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Final COPC Flag (Y/N)	Rationale for Selection or Deletion [5]
Surface and Subsurface Soil to Groundwater		**SVOCs**															
	56-55-3	Benzo(a)anthracene	µg/kg	120	140	2/6	LL1-1	390	-	550	140	410	2,000	N/A	N/A	N	BSTV
	50-32-8	Benzo(a)pyrene	µg/kg	170	170	2/6	LL1-1,LL1-1	390	-	550	170	410	8,000	N/A	N/A	N	BSTV
	205-99-2	Benzo(b)fluoranthene	µg/kg	170	170	2/6	LL1-1,LL1-1	390	-	550	170	250	5,000	N/A	N/A	N	BSTV
	191-24-2	Benzo(g,h,i)perylene	µg/kg	120	130	2/6	LL1-1	390	-	550	130	230	27,000,000 [a]	N/A	N/A	N	BSTV
	207-08-9	Benzo(k)fluoranthene	µg/kg	160	160	2/6	LL1-1,LL1-1	390	-	550	160	230	49,000	N/A	N/A	N	BSTV
	218-01-9	Chrysene	µg/kg	110	180	3/6	LL1-1	390	-	510	180	260	160,000	N/A	N/A	N	BSTV
	206-44-0	Fluoranthene	µg/kg	100	230	4/6	LL1-1	390	-	400	230	230	89,583 [b,c,d]	N/A	N/A	N	BSTV
	193-39-5	Indeno(1,2,3-cd)pyrene	µg/kg	150	150	2/6	LL1-1,LL1-1	390	-	550	150	410	14,000	N/A	N/A	N	BSTV
	129-00-0	Pyrene	µg/kg	120	200	4/6	LL1-1,LL1-1	390	-	400	200	270	4,200,000	N/A	N/A	N	BSTV
		Pesticides															
	72-54-8	4,4'-DDD	µg/kg	1.3	1.5	2/6	LL1-1	3.9	-	5.3	1.5	4.1	16,000	N/A	N/A	N	BSTV
	72-55-9	4,4'-DDE	µg/kg	1.1	2.2	4/6	LL4-3	4.9	-	5.1	2.2	4.3	54,000	N/A	N/A	N	BSTV
	50-29-3	4,4'-DDT	µg/kg	1.4	2.7	3/6	LL1-1	3.9	-	5.3	2.7	N/A	8,000 [c]	N/A	N/A	N	BSTV
	5103-71-9	Alpha-Chlordane	µg/kg	0.69	1.1	3/6	LL5-1	2	-	2.7	1.1	2.7	10,000	N/A	N/A	N	BSTV
	60-57-1	Dieldrin	µg/kg	0.84	2.5	4/6	LL1-1	5.1	-	5.5	2.5	5.3	1 [c]	N/A	N/A	Y	ASTV
	7421-93-4	Endrin aldehyde	µg/kg	1.4	1.4	1/6	LL1-1	3.9	-	5.5	1.4	N/A	1,000	N/A	N/A	N	BSTV
	5103-74-2	gamma-Chlordane	µg/kg	0.9	0.9	1/6	LL4-3	2	-	2.8	0.9	2.8	10,000	N/A	N/A	N	BSTV
	1024-57-3	Heptachlor epoxide	µg/kg	0.8	0.8	1/6	LL1-1	2	-	2.8	0.8	N/A	175 [c]	N/A	N/A	N	BSTV
		TAL-Metals and Cyanide															
	7429-90-5	Aluminum	mg/kg	4930	20900	48/48	LL3-2	N/A	-	N/A	20900	19000	55,000 [a]	N/A	N/A	N	BSTV
	7440-38-2	Arsenic	mg/kg	4.2	28.2	48/48	LL5-3	N/A	-	N/A	28.2	13	30	N/A	N/A	N	BSTV
	7440-39-3	Barium	mg/kg	139	1890	48/48	LL4-2	N/A	-	N/A	1890	220	450 [b]	N/A	N/A	Y	ASTV
	7440-41-7	Beryllium	mg/kg	0.29	1.1	48/48	LL3-2	N/A	-	N/A	1.1	0.92	250 [e]	N/A	N/A	N	BSTV
	7440-43-9	Cadmium	mg/kg	1.5	33.5	48/48	LL4-1	N/A	-	N/A	33.5	6.0	15 [b]	N/A	N/A	Y	ASTV
	7440-70-2	Calcium	mg/kg	7410	45200	48/48	LL1-1	N/A	-	N/A	45200	36000	N/A	N/A	N/A	N	ENUT
	7440-47-3	Chromium	mg/kg	9	85.5	48/48	LL3-2	N/A	-	N/A	85.5	58	32	N/A	N/A	Y	ASTV
	7440-48-4	Cobalt	mg/kg	5.1	14.1	48/48	LL3-2	N/A	-	N/A	14.1	12	0.49 [a]	N/A	N/A	Y	ASTV
	7440-50-8	Copper	mg/kg	16.8	99.1	48/48	LL5-3	N/A	-	N/A	99.1	63	82,5000 [e]	N/A	N/A	N	BSTV
	7439-89-6	Iron	mg/kg	9870	42800	48/48	LL5-3	N/A	-	N/A	42800	32000	42800	N/A	N/A	Y	ASTV
	7439-92-1	Lead	mg/kg	22.3	189	48/48	LL5-1	N/A	-	N/A	189	61	107	N/A	N/A	Y	ASTV
	7439-95-4	Magnesium	mg/kg	4080	15600	48/48	LL2-1	N/A	-	N/A	15600	14000	N/A	N/A	N/A	N	ENUT
	7439-96-5	Manganese	mg/kg	276	2070	48/48	LL2-2	N/A	-	N/A	2070	970	57	N/A	N/A	Y	ASTV
	7439-97-6	Mercury	mg/kg	0.058	0.76	42/48	LL1-4	0.11	-	0.15	0.76	0.34	6.4	N/A	N/A	N	BSTV
	7440-02-0	Nickel	mg/kg	10.7	55.2	48/48	LL3-2	N/A	-	N/A	55.2	39	700	N/A	N/A	N	BSTV
	7440-09-7	Potassium	mg/kg	598	2780	48/48	LL2-1	N/A	-	N/A	2780	2600	N/A	N/A	N/A	N	ENUT
	7782-49-2	Selenium	mg/kg	0.49	3	48/48	LL5-3	N/A	-	N/A	3	N/A	3.3	N/A	N/A	N	BSTV
	7440-22-4	Silver	mg/kg	0.13	2	48/48	LL3-2	N/A	-	N/A	2	1.6	39	N/A	N/A	N	BSTV
	7440-23-5	Sodium	mg/kg	208	703	19/48	LL20-3	576	-	802	703	710	N/A	N/A	N/A	N	ENUT
	7440-62-2	Vanadium	mg/kg	15.1	40.3	48/48	LL3-2	N/A	-	N/A	40.3	39	980	N/A	N/A	N	BSTV
	7440-66-6	Zinc	mg/kg	153	2480	48/48	LL5-3	N/A	-	N/A	2480	280	5333 [d]	N/A	N/A	N	BSTV
		Metals-SPLP															
	7440-38-2 (leached)	Arsenic (leached)	mg/L	0.0044	0.0044	1/6	LL4-3	0.0021	-	0.0021	0.0044	N/A	0.05	N/A	N/A	N	BSTV
	7440-39-3 (leached)	Barium (leached)	mg/L	0.0128	0.228	6/6	LL4-3	N/A	-	N/A	0.228	N/A	0.5 [b]	N/A	N/A	N	BSTV
	7440-43-9 (leached)	Cadmium (leached)	mg/L	0.0028	0.0028	1/6	LL4-3	0.0002	-	0.005	0.0028	N/A	0.0013 [b]	N/A	N/A	Y	ASTV
	7440-47-3 (leached)	Chromium (leached)	mg/L	0.00096	0.0109	5/6	LL4-3	0.0007	-	0.0007	0.0109	N/A	0.1	N/A	N/A	N	BSTV
	7439-92-1 (leached)	Lead (leached)	mg/L	0.0296	0.0296	1/6	LL4-3	0.003	-	0.0068	0.0296	N/A	0.0075	N/A	N/A	Y	ASTV
	7439-97-6 (leached)	Mercury (leached)	mg/L	0.00011	0.00011	1/6	LL4-3	0.0001	-	0.0001	0.00011	N/A	0.002	N/A	N/A	N	BSTV

Table 2.12
Occurrence, Distribution, and Selection of Chemicals of Potential Concern
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Floodplain Surface and Subsurface Soil to Groundwater
Exposure Area: Floodplain Area 2
Receptor: Wildlife Worker and Hunter
Receptor Age: Adult

Exposure Point	CAS Number	Chemical of Potential Concern	Units	Minimum Detect	Maximum Detect	Detection Frequency	Max Detect Location	Minimum Non-Detect		Maximum Non-Detect	Concentration used for Screening [1]	Background Value [2]	Screening Toxicity Value [3,4]	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Final COPC Flag (Y/N)	Rationale for Selection or Deletion [5]
								RANGE									
Surface and Subsurface Soil to Groundwater		**Miscellaneous-SPLP**															
	16887-00-6	Chloride	mg/L	0.545	1.42	4/6	LL1-1	2	-	2	1.42	N/A	200	N/A	N/A	N	BSTV
	16984-48-8	Fluoride	mg/L	0.225	0.575	6/6	LL4-3	N/A	-	N/A	0.575	N/A	1 [e]	N/A	N/A	N	BSTV
	14797-55-8	Nitrate as N	mg/L	0.085	1.82	4/6	LL1-1	0.05	-	0.05	1.82	N/A	2.5 [d]	N/A	N/A	N	BSTV
	98059-61-1	Phosphate	mg/L	0.55	0.65	3/6	LL1-1	0.05	-	0.05	0.65	N/A	N/A	N/A	N/A	N	NSTV [f]
	14808-79-8	Sulfate	mg/L	2.26	28.5	6/6	LL5-1	N/A	-	N/A	28.5	N/A	400	N/A	N/A	N	BSTV

Notes:
[1] Maximum concentration was used as the screening concentration.
[2] Background values represent Upper Prediction Limits (UPLs) from Goose Lake data. When UPLs could not be calculated due to small sample size, maximum background values were used provided that the maximum concentration was not an outlier.
[3] Screening toxicity value represents the most conservative screening criteria from Tiered Approach to Corrective Action Objectives (TACO) soil remediation objectives for the soil component of the groundwater ingestion exposure route (Class I), and non-TACO or provisional soil remediation objectives for the soil component of the groundwater ingestion exposure route (Class I).
[4] For original screening toxicity value prior to adjustment for Mixture Rule, refer to Appendix E tables.
[5] Rationale codes:
BSL = Excluded based on comparison to background value.
ASTV = Retained because screening concentration is above screening toxicity value.
BSTV = Excluded because screening concentration is below screening toxicity value.
NSTV = No screening toxicity value available. Constituent has no associated toxicity value for quantitative evaluation; therefore, this constituent is not retained as a COPC.
ENUT = Essential nutrient.
[a] When TACO values were unavailable, the USEPA Regional Screening Level (RSL) Risk-Based Soil Screening Levels (SSLs) were used as the screening values.
[b] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Kidney; n = 4.
[c] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Liver; n = 4.
[d] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Circulatory System; n = 3.
[e] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Gastrointestinal System; n = 4.
[f] Constituent has no associated toxicity value for quantitative evaluation; therefore this constituent is not retained as a COPC.
Table contains detected constituents only.
ARAR/TBC = Applicable or Relevant and Appropriate Requirement / To Be Considered
COPC = Chemical of Potential Concern
PCB = polychlorinated biphenyl
SVOC = semivolatile organic compound
TAL = target analyte list
SPLP = synthetic precipitation leaching procedure
N/A = Not available
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
mg/L = milligram per liter

Table 2.13
Occurrence, Distribution, and Selection of Chemicals of Potential Concern
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Floodplain Surface and Subsurface Soil
Exposure Area: Floodplain Area 2/3
Receptor: Farmer
Receptor Age: Adult

Exposure Point	CAS Number	Chemical of Potential Concern	Units	Minimum Detect	Maximum Detect	Detection Frequency	Max Detect Location	Minimum Non-Detect RANGE		Maximum Non-Detect RANGE	Concentration used for Screening [1]	Background Value [2]	Screening Toxicity Value [3,4]	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Final COPC Flag (Y/N)	Rationale for Selection or Deletion [5]
Surface and Subsurface Soil		**TAL-Metals and Cyanide**															
	7429-90-5	Aluminum	mg/kg	11200	15100	12/12	LL17-3	N/A	-	N/A	15100	19000	77,000	N/A	N/A	N	BSL
	7440-36-0	Antimony	mg/kg	1.3	1.5	3/12	LL17-1	6.9	-	7.6	1.5	N/A	16 [a]	N/A	N/A	N	BSTV
	7440-38-2	Arsenic	mg/kg	7	9.9	12/12	LL17-2	N/A	-	N/A	9.9	13	0.39	N/A	N/A	N	BSL
	7440-39-3	Barium	mg/kg	140	225	12/12	LL17-2	N/A	-	N/A	225	220	1833 [b]	N/A	N/A	N	BSTV
	7440-41-7	Beryllium	mg/kg	0.64	0.9	12/12	LL17-2	N/A	-	N/A	0.9	0.92	53 [c]	N/A	N/A	N	BSL
	7440-43-9	Cadmium	mg/kg	2.1	11	12/12	LL17-2	N/A	-	N/A	11	6	70	N/A	N/A	N	BSTV
	7440-70-2	Calcium	mg/kg	21700	33000	12/12	LL20-5	N/A	-	N/A	33000	36000	N/A	N/A	N/A	N	ENUT
	7440-47-3	Chromium	mg/kg	38.6	91.3	12/12	LL18-4	N/A	-	N/A	91.3	58	230	N/A	N/A	N	BSTV
	7440-48-4	Cobalt	mg/kg	7.8	9.4	12/12	LL19-6	N/A	-	N/A	9.4	12	23	N/A	N/A	N	BSL
	7440-50-8	Copper	mg/kg	43.6	80.5	12/12	LL17-2	N/A	-	N/A	80.5	63	967 [c]	N/A	N/A	N	BSTV
	7439-89-6	Iron	mg/kg	21500	25200	12/12	LL17-2,LL17-3,LL19-6	N/A	-	N/A	25200	32000	18,300 [c]	N/A	N/A	N	BSL
	7439-92-1	Lead	mg/kg	42.1	87.8	12/12	LL18-4	N/A	-	N/A	87.8	61	400	N/A	N/A	N	BSTV
	7439-95-4	Magnesium	mg/kg	9930	13300	12/12	LL20-5	N/A	-	N/A	13300	14000	N/A	N/A	N/A	N	ENUT
	7439-96-5	Manganese	mg/kg	517	697	12/12	LL17-2	N/A	-	N/A	697	970	1,600	N/A	N/A	N	BSL
	7439-97-6	Mercury	mg/kg	0.17	0.46	12/12	LL18-4	N/A	-	N/A	0.46	0.34	7.8	N/A	N/A	N	BSTV
	7440-02-0	Nickel	mg/kg	27.2	44.7	12/12	LL18-4	N/A	-	N/A	44.7	39	1,500	N/A	N/A	N	BSTV
	7440-09-7	Potassium	mg/kg	1530	2130	12/12	LL17-3	N/A	-	N/A	2130	2600	N/A	N/A	N/A	N	ENUT
	7782-49-2	Selenium	mg/kg	0.99	1.5	12/12	LL17-1,LL18-4	N/A	-	N/A	1.5	N/A	390	N/A	N/A	N	BSTV
	7440-22-4	Silver	mg/kg	0.92	2.1	12/12	LL18-4	N/A	-	N/A	2.1	1.6	390	N/A	N/A	N	BSTV
	7440-23-5	Sodium	mg/kg	135	240	5/12	LL18-4	572	-	637	240	710	N/A	N/A	N/A	N	ENUT
	7440-62-2	Vanadium	mg/kg	24.4	30.7	12/12	LL17-3	N/A	-	N/A	30.7	39	390	N/A	N/A	N	BSTV
	7440-66-6	Zinc	mg/kg	187	484	12/12	LL17-2	N/A	-	N/A	484	280	7667 [a]	N/A	N/A	N	BSTV

Notes:
[1] Maximum concentration was used as the screening concentration.
[2] Background values represent Upper Prediction Limits (UPLs) from Goose Lake data. When UPLs could not be calculated due to small sample size, maximum background values were used provided that the maximum concentration was not an outlier.
[3] Screening toxicity value represents the most conservative screening criteria from USEPA Regional Screening Levels, Soil Remediation Objectives from Tiered Approach to Corrective Action Objectives (TACO), or non-TACO or provisional soil remediation objectives.
[4] For original screening toxicity value prior to adjustment for Mixture Rule, refer to Appendix E tables.
[5] Rationale codes:
BSL = Excluded based on comparison to background value.
ASTV = Retained because screening concentration is above screening toxicity value.
BSTV = Excluded because screening concentration is below screening toxicity value.
ENUT = Essential nutrient.
[a] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Circulatory System; n = 2.
[b] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Kidney; n = 3.
[c] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Gastrointestinal System; n = 3.
Table contains detected constituents only.
ARAR/TBC = Applicable or Relevant and Appropriate Requirement / To Be Considered
COPC = Chemical of Potential Concern
SVOC = semivolatile organic compound
TAL = target analyte list
N/A = Not available
mg/kg = milligram per kilogram

Table 2.14
Occurrence, Distribution, and Selection of Chemicals of Potential Concern
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Floodplain Surface and Subsurface Soil to Groundwater
Exposure Area: Floodplain Area 2/3
Receptor: Farmer
Receptor Age: Adult

Exposure Point	CAS Number	Chemical of Potential Concern	Units	Minimum Detect	Maximum Detect	Detection Frequency	Max Detect Location	Minimum Non-Detect RANGE		Maximum Non-Detect RANGE	Concentration used for Screening [1]	Background Value [2]	Screening Toxicity Value [3,4]	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Final COPC Flag (Y/N)	Rationale for Selection or Deletion [5]
Surface and		**TAL-Metals and Cyanide**															
Subsurface	7429-90-5	Aluminum	mg/kg	11200	15100	12/12	LL17-3	N/A	-	N/A	15100	19000	55,000 [a]	N/A	N/A	N	BSL
Soil to	7440-36-0	Antimony	mg/kg	1.3	1.5	3/12	LL17-1	6.9	-	7.6	1.5	N/A	2.5 [b]	N/A	N/A	N	BSTV
Groundwater	7440-38-2	Arsenic	mg/kg	7	9.9	12/12	LL17-2	N/A	-	N/A	9.9	13	30	N/A	N/A	N	BSL
	7440-39-3	Barium	mg/kg	140	225	12/12	LL17-2	N/A	-	N/A	225	220	600 [d]	N/A	N/A	N	BSTV
	7440-41-7	Beryllium	mg/kg	0.64	0.9	12/12	LL17-2	N/A	-	N/A	0.9	0.92	333 [c]	N/A	N/A	N	BSL
	7440-43-9	Cadmium	mg/kg	2.1	11	12/12	LL17-2	N/A	-	N/A	11	6	20 [d]	N/A	N/A	N	BSTV
	7440-70-2	Calcium	mg/kg	21700	33000	12/12	LL20-5	N/A	-	N/A	33000	36000	N/A	N/A	N/A	N	ENUT
	7440-47-3	Chromium	mg/kg	38.6	91.3	12/12	LL18-4	N/A	-	N/A	91.3	58	32	N/A	N/A	Y	ASTV
	7440-48-4	Cobalt	mg/kg	7.8	9.4	12/12	LL19-6	N/A	-	N/A	9.4	12	0.49 [a]	N/A	N/A	N	BSL
	7440-50-8	Copper	mg/kg	43.6	80.5	12/12	LL17-2	N/A	-	N/A	80.5	63	110,000 [c]	N/A	N/A	N	BSTV
	7439-89-6	Iron	mg/kg	21500	25200	12/12	LL17-2,LL17-3,LL19-6	N/A	-	N/A	25200	32000	640 [c]	N/A	N/A	N	BSL
	7439-92-1	Lead	mg/kg	42.1	87.8	12/12	LL18-4	N/A	-	N/A	87.8	61	107	N/A	N/A	N	BSTV
	7439-95-4	Magnesium	mg/kg	9930	13300	12/12	LL20-5	N/A	-	N/A	13300	14000	N/A	N/A	N/A	N	ENUT
	7439-96-5	Manganese	mg/kg	517	697	12/12	LL17-2	N/A	-	N/A	697	970	57 [a]	N/A	N/A	N	BSL
	7439-97-6	Mercury	mg/kg	0.17	0.46	12/12	LL18-4	N/A	-	N/A	0.46	0.34	6.4	N/A	N/A	N	BSTV
	7440-02-0	Nickel	mg/kg	27.2	44.7	12/12	LL18-4	N/A	-	N/A	44.7	39	700	N/A	N/A	N	BSTV
	7440-09-7	Potassium	mg/kg	1530	2130	12/12	LL17-3	N/A	-	N/A	2130	2600	N/A	N/A	N/A	N	ENUT
	7782-49-2	Selenium	mg/kg	0.99	1.5	12/12	LL17-1,LL18-4	N/A	-	N/A	1.5	N/A	3.3	N/A	N/A	N	BSTV
	7440-22-4	Silver	mg/kg	0.92	2.1	12/12	LL18-4	N/A	-	N/A	2.1	1.6	39	N/A	N/A	N	BSTV
	7440-23-5	Sodium	mg/kg	135	240	5/12	LL18-4	572	-	637	240	710	N/A	N/A	N/A	N	ENUT
	7440-62-2	Vanadium	mg/kg	24.4	30.7	12/12	LL17-3	N/A	-	N/A	30.7	39	327 [d]	N/A	N/A	N	BSTV
	7440-66-6	Zinc	mg/kg	187	484	12/12	LL17-2	N/A	-	N/A	484	280	8,000 [b]	N/A	N/A	N	BSTV

Notes:
[1] Maximum concentration was used as the screening concentration.
[2] Background values represent Upper Prediction Limits (UPLs) from Goose Lake data. When UPLs could not be calculated due to small sample size, maximum background values were used provided that the maximum concentration was not an outlier.
[3] Screening toxicity value represents the most conservative screening criteria from Tiered Approach to Corrective Action Objectives (TACO) soil remediation objectives for the soil component of the groundwater ingestion exposure route (Class I), and non-TACO or provisional soil remediation objectives for the soil component of the groundwater ingestion exposure route (Class I).
[4] For original screening toxicity value prior to adjustment for Mixture Rule, refer to Appendix E tables.
[5] Rationale codes:
BSL = Excluded based on comparison to background value.
ASTV = Retained because screening concentration is above screening toxicity value.
BSTV = Excluded because screening concentration is below screening toxicity value.
ENUT = Essential nutrient.
[a] When TACO values were unavailable, the USEPA Regional Screening Level (RSL) Risk-Based Soil Screening Levels (SSLs) were used as the screening values.
[b] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Circulatory System; n = 2.
[c] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Gastrointestinal System; n = 3.
[d] Screening toxicity value adjusted for TACO Mixture Rule. Target organ = Kidney; n = 3.
Table contains detected constituents only.
ARAR/TBC = Applicable or Relevant and Appropriate Requirement / To Be Considered
COPC = Chemical of Potential Concern
SVOC = semivolatile organic compound
TAL = target analyte list
N/A = Not available
mg/kg = milligram per kilogram

Table 2.15
Occurrence, Distribution, and Selection of Chemicals of Potential Concern
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Surface Sediment
Exposure Area: Sediment Area 1A
Receptor: Village Park Recreational User, Shoreline Angler
Receptor Age: Adult and Child

Exposure Point	CAS Number	Chemical of Potential Concern	Units	Minimum Detect	Maximum Detect	Detection Frequency	Max Detect Location	Minimum Non-Detect		Maximum Non-Detect RANGE	Concentration used for Screening [1]	Background Value [2]	Screening Toxicity Value [3,4]	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Final COPC Flag (Y/N)	Rationale for Selection or Deletion [5]
Surface		**SVOCs**															
Sediment	90-12-0	1-Methylnaphthalene	µg/kg	4.1	4.1	1/1	K-1.5 (2007)	N/A	-	N/A	4.1	7.9	22,000	N/A	N/A	N	BSL
	91-57-6	2-Methylnaphthalene	µg/kg	6.1	6.1	1/1	K-1.5 (2007)	N/A	-	N/A	6.1	16	310,000	N/A	N/A	N	BSL
	83-32-9	Acenaphthene	µg/kg	7.5	7.5	1/1	K-1.5 (2007)	N/A	-	N/A	7.5	15	3,400,000	N/A	N/A	N	BSL
	208-96-8	Acenaphthylene	µg/kg	6.3	6.3	1/1	K-1.5 (2007)	N/A	-	N/A	6.3	83	46,939 [a,b]	N/A	N/A	N	BSL
	120-12-7	Anthracene	µg/kg	18	18	1/1	K-1.5 (2007)	N/A	-	N/A	18	78	17,000,000	N/A	N/A	N	BSL
	56-55-3	Benzo(a)anthracene	µg/kg	47	47	1/1	K-1.5 (2007)	N/A	-	N/A	47	230	150	N/A	N/A	Y	cPAH
	50-32-8	Benzo(a)pyrene	µg/kg	46	46	1/1	K-1.5 (2007)	N/A	-	N/A	46	430	15	N/A	N/A	Y	ASTV
	205-99-2	Benzo(b)fluoranthene	µg/kg	52	52	1/1	K-1.5 (2007)	N/A	-	N/A	52	410	150	N/A	N/A	Y	cPAH
	191-24-2	Benzo(g,h,i)perylene	µg/kg	37	37	1/1	K-1.5 (2007)	N/A	-	N/A	37	380	150	N/A	N/A	N	BSL
	207-08-9	Benzo(k)fluoranthene	µg/kg	43	43	1/1	K-1.5 (2007)	N/A	-	N/A	43	390	1,500	N/A	N/A	Y	cPAH
	218-01-9	Chrysene	µg/kg	72	72	1/1	K-1.5 (2007)	N/A	-	N/A	72	420	15,000	N/A	N/A	Y	cPAH
	53-70-3	Dibenz(a,h)anthracene	µg/kg	9.4	9.4	1/1	K-1.5 (2007)	N/A	-	N/A	9.4	83	15	N/A	N/A	Y	cPAH
	206-44-0	Fluoranthene	µg/kg	130	130	1/1	K-1.5 (2007)	N/A	-	N/A	130	520	2,300,000	N/A	N/A	N	BSL
	86-73-7	Fluorene	µg/kg	9	9	1/1	K-1.5 (2007)	N/A	-	N/A	9	23	2,300,000	N/A	N/A	N	BSL
	193-39-5	Indeno(1,2,3-cd)pyrene	µg/kg	37	37	1/1	K-1.5 (2007)	N/A	-	N/A	37	420	150	N/A	N/A	Y	cPAH
	91-20-3	Naphthalene	µg/kg	6.1	6.1	1/1	K-1.5 (2007)	N/A	-	N/A	6.1	26	900 [f]	N/A	N/A	N	BSL
	85-01-8	Phenanthrene	µg/kg	80	80	1/1	K-1.5 (2007)	N/A	-	N/A	80	110	328,571 [a]	N/A	N/A	N	BSL
	129-00-0	Pyrene	µg/kg	130	130	1/1	K-1.5 (2007)	N/A	-	N/A	130	640	242,857 [a]	N/A	N/A	N	BSL
		SVOCs-SIM															
	90-12-0	1-Methylnaphthalene	µg/kg	0.98	700	4/5	SD-E	5.5	-	5.5	700	7.9	22,000	N/A	N/A	N	BSTV
	91-57-6	2-Methylnaphthalene	µg/kg	1.3	1000	4/5	SD-E	5.5	-	5.5	1000	16	310,000	N/A	N/A	N	BSTV
	83-32-9	Acenaphthene	µg/kg	1.7	2300	4/5	SD-E	5.5	-	5.5	2300	15	3,400,000	N/A	N/A	N	BSTV
	208-96-8	Acenaphthylene	µg/kg	0.93	280	5/5	SD-E	N/A	-	N/A	280	83	46,939 [a,b]	N/A	N/A	N	BSTV
	120-12-7	Anthracene	µg/kg	2.9	3200	5/5	SD-E	N/A	-	N/A	3200	78	17,000,000	N/A	N/A	N	BSTV
	56-55-3	Benzo(a)anthracene	µg/kg	9.5	4000	5/5	SD-E	N/A	-	N/A	4000	230	150	N/A	N/A	Y	ASTV
	50-32-8	Benzo(a)pyrene	µg/kg	6.9	3400	5/5	SD-E	N/A	-	N/A	3400	430	15	N/A	N/A	Y	ASTV
	205-99-2	Benzo(b)fluoranthene	µg/kg	7	2800	5/5	SD-E	N/A	-	N/A	2800	410	150	N/A	N/A	Y	ASTV
	191-24-2	Benzo(g,h,i)perylene	µg/kg	3.1	1200	5/5	SD-E	N/A	-	N/A	1200	380	150	N/A	N/A	Y	ASTV
	207-08-9	Benzo(k)fluoranthene	µg/kg	6.9	3000	5/5	SD-E	N/A	-	N/A	3000	390	1,500	N/A	N/A	Y	ASTV
	218-01-9	Chrysene	µg/kg	8.5	3500	5/5	SD-E	N/A	-	N/A	3500	420	15,000	N/A	N/A	Y	cPAH
	53-70-3	Dibenz(a,h)anthracene	µg/kg	1.2	550	5/5	SD-E	N/A	-	N/A	550	83	15	N/A	N/A	Y	ASTV
	206-44-0	Fluoranthene	µg/kg	21	11000	5/5	SD-E	N/A	-	N/A	11000	520	2,300,000	N/A	N/A	N	BSTV
	86-73-7	Fluorene	µg/kg	0.9	2200	5/5	SD-E	N/A	-	N/A	2200	23	2,300,000	N/A	N/A	N	BSTV
	193-39-5	Indeno(1,2,3-cd)pyrene	µg/kg	4.1	1700	5/5	SD-E	N/A	-	N/A	1700	420	150	N/A	N/A	Y	ASTV
	91-20-3	Naphthalene	µg/kg	1.2	2100	4/5	SD-E	5.5	-	5.5	2100	26	900 [f]	N/A	N/A	Y	ASTV
	85-01-8	Phenanthrene	µg/kg	9.9	14000	5/5	SD-E	N/A	-	N/A	14000	110	328,571 [a]	N/A	N/A	N	BSTV
	129-00-0	Pyrene	µg/kg	17	8500	5/5	SD-E	N/A	-	N/A	8500	640	242,857 [a]	N/A	N/A	N	BSTV
		PCBs															
	11097-69-1	Aroclor 1254	µg/kg	23	110	2/6	SD-D	42	-	44	110	68	220	N/A	N/A	N	BSTV
		Pesticides															
	72-54-8	4,4'-DDD	µg/kg	1.8	11	2/6	SD-D	2.3	-	4.4	11	N/A	2,000	N/A	N/A	N	BSTV
	72-55-9	4,4'-DDE	µg/kg	2.9	15	3/6	SD-D	4.3	-	4.4	15	7.2	1,400	N/A	N/A	N	BSTV
	50-29-3	4,4'-DDT	µg/kg	2.2	2.2	1/6	SD-E	2.3	-	4.5	2.2	6.2	1,700	N/A	N/A	N	BSTV
	319-84-6	Alpha-BHC	µg/kg	0.76	0.76	1/6	SD-D	1.2	-	2.3	0.76	N/A	77	N/A	N/A	N	BSTV
	5103-71-9	Alpha-Chlordane	µg/kg	4.5	4.5	1/6	SD-D	1.2	-	2.3	4.5	0.71	1,600	N/A	N/A	N	BSTV
	60-57-1	Dieldrin	µg/kg		1.7	1/6	SD-A	2.3	-	4.5	1.7	3.9	30	N/A	N/A	N	BSTV
	72-20-8	Endrin	µg/kg		1.3	1/6	SD-A	2.3	-	4.5	1.3	N/A	18,000	N/A	N/A	N	BSTV
	5103-74-2	gamma-Chlordane	µg/kg	1.7	6.5	3/6	K-1.5 (2007)	2.2	-	2.3	6.5	7.5	1,600	N/A	N/A	N	BSTV
	1024-57-3	Heptachlor epoxide	µg/kg	0.63	0.72	2/6	K-1.5 (2007)	2.2	-	2.3	0.72	3.1	53	N/A	N/A	N	BSTV

Table 2.15
Occurrence, Distribution, and Selection of Chemicals of Potential Concern
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Surface Sediment
Exposure Area: Sediment Area 1A
Receptor: Village Park Recreational User, Shoreline Angler
Receptor Age: Adult and Child

Exposure Point	CAS Number	Chemical of Potential Concern	Units	Minimum Detect	Maximum Detect	Detection Frequency	Max Detect Location	Minimum Non-Detect RANGE		Maximum Non-Detect RANGE	Concentration used for Screening [1]	Background Value [2]	Screening Toxicity Value [3,4]	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Final COPC Flag (Y/N)	Rationale for Selection or Deletion [5]
Surface		**TAL-Metals and Cyanide**															
Sediment	7429-90-5	Aluminum	mg/kg	2510	17300	9/9	L.5-1.5 (2007)	N/A	-	N/A	17300	21000	77,000	N/A	N/A	N	HYP
	7440-36-0	Antimony	mg/kg	0.96	0.96	1/8	L.5-1.5 (2007)	7.2	-	8.6	0.96	1.8	8 [c]	N/A	N/A	N	BSL
	7440-38-2	Arsenic	mg/kg	4.2	30.5	9/9	SD-A	N/A	-	N/A	30.5	7.3	0.39	N/A	N/A	Y	ASTV
	7440-39-3	Barium	mg/kg	92.9	902	9/9	L-1.5 (2007)	N/A	-	N/A	902	170	786 [a]	N/A	N/A	Y	ASTV
	7440-41-7	Beryllium	mg/kg	0.2	0.82	9/9	L.5-1.5 (2007)	N/A	-	N/A	0.82	1.0	53 [e]	N/A	N/A	N	HYP
	7440-43-9	Cadmium	mg/kg	1.7	113	8/9	SD-E	0.65	-	0.65	113	2.7	70	N/A	N/A	Y	ASTV
	7440-70-2	Calcium	mg/kg	14700	61200	9/9	SD-E	N/A	-	N/A	61200	43000	N/A	N/A	N/A	N	ENUT
	7440-47-3	Chromium	mg/kg	5.7	41.4	9/9	L.5-1.5 (2007)	N/A	-	N/A	41.4	46	230	N/A	N/A	N	HYP
	7440-48-4	Cobalt	mg/kg	1.9	13.9	9/9	K.5-1.5 (2007)	N/A	-	N/A	13.9	11	23	N/A	N/A	N	HYP
	7440-50-8	Copper	mg/kg	10.3	170	9/9	L.5-1.5 (2007)	N/A	-	N/A	170	47	967 [e]	N/A	N/A	N	BSTV
	57-12-5	Cyanide	mg/kg	0.36	1.1	3/6	SD-A	0.22	-	3.4	1.1	N/A	1,600	N/A	N/A	N	BSTV
	7439-89-6	Iron	mg/kg	10600	27700	9/9	L.5-1.5 (2007)	N/A	-	N/A	27700	30000	18,333 [e]	N/A	N/A	N	HYP
	7439-92-1	Lead	mg/kg	8.4	1330	9/9	SD-A	N/A	-	N/A	1330	44	400	N/A	N/A	Y	ASTV
	7439-95-4	Magnesium	mg/kg	5380	32600	9/9	SD-E	N/A	-	N/A	32600	12000	N/A	N/A	N/A	N	ENUT
	7439-96-5	Manganese	mg/kg	171	963	9/9	L.5-1.5 (2007)	N/A	-	N/A	963	790	800 [d]	N/A	N/A	N	HYP
	7439-97-6	Mercury	mg/kg	0.097	0.69	6/9	L.5-1.5 (2007)	0.1	-	0.13	0.69	0.26	7.8	N/A	N/A	N	BSTV
	7440-02-0	Nickel	mg/kg	8.8	31.2	9/9	L.5-1.5 (2007)	N/A	-	N/A	31.2	38	1,500	N/A	N/A	N	HYP
	7440-09-7	Potassium	mg/kg	287	2770	9/9	L.5-1.5 (2007)	N/A	-	N/A	2770	3500	N/A	N/A	N/A	N	ENUT
	7782-49-2	Selenium	mg/kg	0.78	0.78	1/9	L-1.5 (2007)	4.2	-	10.8	0.78	N/A	390	N/A	N/A	N	BSTV
	7440-22-4	Silver	mg/kg	0.32	10.4	8/9	SD-A	1.3	-	1.3	10.4	0.69	390	N/A	N/A	N	BSTV
	7440-23-5	Sodium	mg/kg	188	390	4/9	L.5-1.5 (2007)	602	-	1350	390	430	N/A	N/A	N/A	N	ENUT
	7440-28-0	Thallium	mg/kg	0.38	2.4	7/9	SD-A	6.7	-	7.7	2.4	2.4	6.3	N/A	N/A	N	BSL
	7440-62-2	Vanadium	mg/kg	8.4	53.8	9/9	SD-A	N/A	-	N/A	53.8	37	390	N/A	N/A	N	BSTV
	7440-66-6	Zinc	mg/kg	52.5	7210	9/9	SD-A	N/A	-	N/A	7210	240	5,750 [c]	N/A	N/A	Y	ASTV

Notes:

[1] Maximum concentration was used as the screening concentration.

[2] Background values represent Upper Prediction Limits (UPLs) from Goose Lake data. When UPLs could not be calculated due to small sample size, maximum background values were used provided that the maximum concentration was not an outlier.

[3] Screening toxicity value represents the most conservative screening criteria from USEPA Regional Screening Levels, Soil Remediation Objectives from Tiered Approach to Corrective Action Objectives (TACO), or non-TACO or provisional soil remediation objectives.

[4] For original screening toxicity value prior to adjustment for Mixture Rule, refer to Appendix E tables.

[5] Rationale codes:
HYP = Excluded based on hypothesis testing, which indicated site concentrations are not significantly different than background concentrations.
BSL = Excluded based on comparison to background value.
ASTV = Retained because screening concentration is above screening toxicity value.
BSTV = Excluded because screening concentration is below screening toxicity value.
ENUT = Essential nutrient.
cPAH = Retained because constituent is a carcinogenic PAH greater than the background value.

[a] The screening toxicity value was adjusted for the TACO Mixture Rule. Target organ = Kidney; n = 7.
[b] The screening toxicity value was adjusted for the TACO Mixture Rule. Target organ = Liver; n = 7.
[c] The screening toxicity value was adjusted for the TACO Mixture Rule. Target organ = Circulatory System; n = 4.
[d] The screening toxicity value was adjusted for the TACO Mixture Rule. Target organ = Central Nervous System; n = 2.
[e] The screening toxicity value was adjusted for the TACO Mixture Rule. Target organ = Gastrointestinal System; n = 3.
[f] The screening toxicity value was adjusted for the TACO Mixture Rule. Target organ = Body Weight; n = 2.

Table contains detected constituents only.

ARAR/TBC = Applicable or Relevant and Appropriate Requirement / To Be Considered
COPC = Chemical of Potential Concern
PCB = polychlorinated biphenyl
SVOC = semivolatile organic compound
TAL = target analyte list

N/A = Not available

µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
SIM = selective ion monitoring

Table 2.16
Occurrence, Distribution, and Selection of Chemicals of Potential Concern
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Surface Sediment
Exposure Area: Lake-wide
Receptor: Boater and Boat Angler
Receptor Age: Adult and Child

Exposure Point	CAS Number	Chemical of Potential Concern	Units	Minimum Detect	Maximum Detect	Detection Frequency	Max Detect Location	Minimum Non-Detect RANGE	Maximum Non-Detect RANGE	Concentration used for Screening [1]	Background Value [2]	Screening Toxicity Value [3,4]	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Final COPC Flag (Y/N)	Rationale for Selection or Deletion [5]
Surface		**SVOCs**														
Sediment	90-12-0	1-Methylnaphthalene	µg/kg	2.2	2700	19/19	O1 (2007)	N/A	N/A	2700	7.9	22,000	N/A	N/A	N	BSTV
	91-57-6	2-Methylnaphthalene	µg/kg	3.5	3400	19/19	O1 (2007)	N/A	N/A	3400	16	310,000	N/A	N/A	N	BSTV
	83-32-9	Acenaphthene	µg/kg	3.5	770	19/19	O1 (2007)	N/A	N/A	770	15	3,400,000	N/A	N/A	N	BSTV
	208-96-8	Acenaphthylene	µg/kg	6.3	620	19/19	O1 (2007)	N/A	N/A	620	83	23,000 [a,b]	N/A	N/A	N	BSTV
	120-12-7	Anthracene	µg/kg	12	1100	19/19	O1 (2007)	N/A	N/A	1100	78	17,000,000	N/A	N/A	N	BSTV
	56-55-3	Benzo(a)anthracene	µg/kg	45	390	19/19	O1 (2007)	N/A	N/A	390	230	150	N/A	N/A	Y	ASTV
	50-32-8	Benzo(a)pyrene	µg/kg	46	320	19/19	D9 (2007)	N/A	N/A	320	430	15	N/A	N/A	Y	cPAH
	205-99-2	Benzo(b)fluoranthene	µg/kg	52	650	19/19	D9 (2007)	N/A	N/A	650	410	150	N/A	N/A	Y	ASTV
	191-24-2	Benzo(g,h,i)perylene	µg/kg	37	280	19/19	D9 (2007)	N/A	N/A	280	380	150	N/A	N/A	N	BSL
	207-08-9	Benzo(k)fluoranthene	µg/kg	43	510	19/19	D9 (2007)	N/A	N/A	510	390	1,500	N/A	N/A	Y	cPAH
	218-01-9	Chrysene	µg/kg	56	560	19/19	O1 (2007)	N/A	N/A	560	420	15,000	N/A	N/A	Y	cPAH
	53-70-3	Dibenz(a,h)anthracene	µg/kg	9.4	74	19/19	D9 (2007)	N/A	N/A	74	83	15	N/A	N/A	Y	cPAH
	206-44-0	Fluoranthene	µg/kg	91	1200	19/19	O1 (2007)	N/A	N/A	1200	520	2,300,000	N/A	N/A	N	BSTV
	86-73-7	Fluorene	µg/kg	5.2	2700	19/19	O1 (2007)	N/A	N/A	2700	23	2,300,000	N/A	N/A	N	BSTV
	193-39-5	Indeno(1,2,3-cd)pyrene	µg/kg	37	290	19/19	D9 (2007)	N/A	N/A	290	420	150	N/A	N/A	Y	cPAH
	91-20-3	Naphthalene	µg/kg	5.3	2800	13/19	O1 (2007)	14	25	2800	26	450 [f]	N/A	N/A	Y	ASTV
	85-01-8	Phenanthrene	µg/kg	35	5200	19/19	O1 (2007)	N/A	N/A	5200	110	230,000 [a]	N/A	N/A	N	BSTV
	129-00-0	Pyrene	µg/kg	85	950	19/19	O1 (2007)	N/A	N/A	950	640	170,000 [a]	N/A	N/A	N	BSTV
		SVOCs-SIM														
	90-12-0	1-Methylnaphthalene	µg/kg	0.98	700	4/5	SD-E	5.5	5.5	700	7.9	22,000	N/A	N/A	N	BSTV
	91-57-6	2-Methylnaphthalene	µg/kg	1.3	1000	4/5	SD-E	5.5	5.5	1000	16	310,000	N/A	N/A	N	BSTV
	83-32-9	Acenaphthene	µg/kg	1.7	2300	4/5	SD-E	5.5	5.5	2300	15	3,400,000	N/A	N/A	N	BSTV
	208-96-8	Acenaphthylene	µg/kg	0.93	280	5/5	SD-E	N/A	N/A	280	83	23,000 [a,b]	N/A	N/A	N	BSTV
	120-12-7	Anthracene	µg/kg	2.9	3200	5/5	SD-E	N/A	N/A	3200	78	17,000,000	N/A	N/A	N	BSTV
	56-55-3	Benzo(a)anthracene	µg/kg	9.5	4000	5/5	SD-E	N/A	N/A	4000	230	150	N/A	N/A	Y	ASTV
	50-32-8	Benzo(a)pyrene	µg/kg	6.9	3400	5/5	SD-E	N/A	N/A	3400	430	15	N/A	N/A	Y	ASTV
	205-99-2	Benzo(b)fluoranthene	µg/kg	7	2800	5/5	SD-E	N/A	N/A	2800	410	150	N/A	N/A	Y	ASTV
	191-24-2	Benzo(g,h,i)perylene	µg/kg	3.1	1200	5/5	SD-E	N/A	N/A	1200	380	150	N/A	N/A	Y	ASTV
	207-08-9	Benzo(k)fluoranthene	µg/kg	6.9	3000	5/5	SD-E	N/A	N/A	3000	390	1,500	N/A	N/A	Y	ASTV
	218-01-9	Chrysene	µg/kg	8.5	3500	5/5	SD-E	N/A	N/A	3500	420	15,000	N/A	N/A	Y	cPAH
	53-70-3	Dibenz(a,h)anthracene	µg/kg	1.2	550	5/5	SD-E	N/A	N/A	550	83	15	N/A	N/A	Y	ASTV
	206-44-0	Fluoranthene	µg/kg	21	11000	5/5	SD-E	N/A	N/A	11000	520	2,300,000	N/A	N/A	N	BSTV
	86-73-7	Fluorene	µg/kg	0.9	2200	5/5	SD-E	N/A	N/A	2200	23	2,300,000	N/A	N/A	N	BSTV
	193-39-5	Indeno(1,2,3-cd)pyrene	µg/kg	4.1	1700	5/5	SD-E	N/A	N/A	1700	420	150	N/A	N/A	Y	ASTV
	91-20-3	Naphthalene	µg/kg	1.2	2100	4/5	SD-E	5.5	5.5	2100	26	450 [f]	N/A	N/A	Y	ASTV
	85-01-8	Phenanthrene	µg/kg	9.9	14000	5/5	SD-E	N/A	N/A	14000	110	230,000 [a]	N/A	N/A	N	BSTV
	129-00-0	Pyrene	µg/kg	17	8500	5/5	SD-E	N/A	N/A	8500	640	170,000 [a]	N/A	N/A	N	BSTV
		PCBs														
	11097-69-1	Aroclor 1254	µg/kg	21	110	13/24	SD-D	15	52	110	68	220	N/A	N/A	N	BSTV
	11096-82-5	Aroclor 1260	µg/kg	33	34	2/24	D7 (2007)	12	52	34	N/A	220	N/A	N/A	N	BSTV
		Pesticides														
	72-54-8	4,4'-DDD	µg/kg	0.73	23	10/24	N3 (2007)	2.3	10	23	N/A	2,000	N/A	N/A	N	BSTV
	72-55-9	4,4'-DDE	µg/kg	2.2	15	20/24	SD-D	3.3	4.4	15	7.2	1,400	N/A	N/A	N	BSTV
	50-29-3	4,4'-DDT	µg/kg	1.8	10	6/24	O1 (2007)	2.3	10	10	6.2	1,700	N/A	N/A	N	BSTV
	309-00-2	Aldrin	µg/kg	1.2	3.6	4/24	R1.5 (2007)	1.2	5.2	3.6	N/A	29	N/A	N/A	N	BSTV
	319-84-6	Alpha-BHC	µg/kg	0.76	6.7	5/24	N.5-1.5 (2007)	1.2	3.5	6.7	N/A	77	N/A	N/A	N	BSTV
	5103-71-9	Alpha-Chlordane	µg/kg	1.7	4.5	3/24	SD-D	1.2	5.2	4.5	0.71	1,600	N/A	N/A	N	BSTV
	319-85-7	Beta-BHC	µg/kg	1.5	4.1	13/23	J4 (2007)	0.59	2.6	4.1	1.9	270	N/A	N/A	N	BSTV
	319-86-8	delta-BHC	µg/kg	0.85	17	6/23	N.5-1.5 (2007)	1.2	3.5	17	N/A	270	N/A	N/A	N	BSTV
	60-57-1	Dieldrin	µg/kg	1.4	6.1	9/24	N3 (2007)	2.3	10	6.1	3.9	30	N/A	N/A	N	BSTV
	959-98-8	Endosulfan I	µg/kg	5.2	5.2	1/24	O1 (2007)	1.2	5.2	5.2	N/A	370,000	N/A	N/A	N	BSTV
	33213-65-9	Endosulfan II	µg/kg	12	12	1/24	O1 (2007)	2.3	10	12	1.4	370,000	N/A	N/A	N	BSTV

Table 2.16
Occurrence, Distribution, and Selection of Chemicals of Potential Concern
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Surface Sediment
Exposure Area: Lake-wide
Receptor: Boater and Boat Angler
Receptor Age: Adult and Child

Exposure Point	CAS Number	Chemical of Potential Concern	Units	Minimum Detect	Maximum Detect	Detection Frequency	Max Detect Location	Minimum Non-Detect RANGE		Maximum Non-Detect RANGE	Concentration used for Screening [1]	Background Value [2]	Screening Toxicity Value [3,4]	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Final COPC Flag (Y/N)	Rationale for Selection or Deletion [5]
Surface Sediment	72-20-8	Endrin	µg/kg	1.3	8.2	3/24	O1 (2007)	2.3	-	10	8.2	N/A	18,000	N/A	N/A	N	BSTV
	7421-93-4	Endrin aldehyde	µg/kg	1.7	4.9	8/24	M-1.5 (2007)	2.3	-	10	4.9	N/A	18,000	N/A	N/A	N	BSTV
	53494-70-5	Endrin ketone	µg/kg	2.1	11	2/24	O1 (2007)	2.3	-	10	11	N/A	18,000	N/A	N/A	N	BSTV
	58-89-9	gamma-BHC (Lindane)	µg/kg	4.9	34	3/24	N.5-1.5 (2007)	1.2	-	3.5	34	N/A	5 [a,b]	N/A	N/A	Y	ASTV
	5103-74-2	gamma-Chlordane	µg/kg	1.7	12	15/24	F7 (2007),J4 (2007),R1.5 (2007)	1.7	-	5.2	12	7.5	1,600	N/A	N/A	N	BSTV
	76-44-8	Heptachlor	µg/kg	1.9	4.8	4/24	O1 (2007)	1.2	-	5.2	4.8	0.68	10 [b]	N/A	N/A	N	BSTV
	1024-57-3	Heptachlor epoxide	µg/kg	0.63	8.4	10/24	O1 (2007)	1.7	-	5.2	8.4	3.1	53	N/A	N/A	N	BSTV
	72-43-5	Methoxychlor	µg/kg	58	58	1/24	O1 (2007)	12	-	52	58	N/A	310,000	N/A	N/A	N	BSTV
		TAL-Metals and Cyanide															
	7429-90-5	Aluminum	mg/kg	997	25100	83/83	R1 (2007)	N/A	-	N/A	25100	21000	77,000	N/A	N/A	N	HYP
	7440-36-0	Antimony	mg/kg	0.64	1.2	9/44	L.5-2 (2007)	7	-	19	1.2	1.8	5 [c]	N/A	N/A	N	HYP
	7440-38-2	Arsenic	mg/kg	2.4	113	83/83	O1 (2007)	N/A	-	N/A	113	7.3	0.39	N/A	N/A	Y	ASTV
	7440-39-3	Barium	mg/kg	50.2	2870	83/83	O1 (2007)	N/A	-	N/A	2870	170	550 [a]	N/A	N/A	Y	BSTV
	7440-41-7	Beryllium	mg/kg	0.14	1.4	83/83	R1 (2007)	N/A	-	N/A	1.4	1.0	53 [e]	N/A	N/A	N	BSTV
	7440-43-9	Cadmium	mg/kg	1.3	840	82/83	O1 (2007)	0.65	-	0.65	840	2.7	70	N/A	N/A	Y	ASTV
	7440-70-2	Calcium	mg/kg	10500	84900	83/83	N.5-1 (2007)	N/A	-	N/A	84900	43000	N/A	N/A	N/A	N	ENUT
	7440-47-3	Chromium	mg/kg	3.3	78.9	83/83	P1 (2007)	N/A	-	N/A	78.9	46	230	N/A	N/A	N	BSTV
	7440-48-4	Cobalt	mg/kg	1.8	111	83/83	O1 (2007)	N/A	-	N/A	111	11	23	N/A	N/A	Y	ASTV
	7440-50-8	Copper	mg/kg	10.3	6030	83/83	O1 (2007)	N/A	-	N/A	6030	47	967 [e]	N/A	N/A	Y	ASTV
	57-12-5	Cyanide	mg/kg	0.36	1.1	9/24	SD-A	0.22	-	7	1.1	N/A	1,600	N/A	N/A	N	BSTV
	7439-89-6	Iron	mg/kg	4530	74400	83/83	O1 (2007)	N/A	-	N/A	74400	30000	18,333 [e]	N/A	N/A	Y	ASTV
	7439-92-1	Lead	mg/kg	8.4	12900	83/83	O1 (2007)	N/A	-	N/A	12900	44	400	N/A	N/A	Y	ASTV
	7439-95-4	Magnesium	mg/kg	4280	32600	83/83	SD-E	N/A	-	N/A	32600	12000	N/A	N/A	N/A	N	ENUT
	7439-96-5	Manganese	mg/kg	171	2810	83/83	O1 (2007)	N/A	-	N/A	2810	790	800 [d]	N/A	N/A	Y	ASTV
	7439-97-6	Mercury	mg/kg	0.097	32.1	70/83	O1 (2007)	0.1	-	0.36	32.1	0.26	7.8	N/A	N/A	Y	ASTV
	7440-02-0	Nickel	mg/kg	8.8	63.1	82/83	R1 (2007)	4.6	-	4.6	63.1	38	1,500	N/A	N/A	N	BSTV
	7440-09-7	Potassium	mg/kg	161	3770	83/83	R1 (2007)	N/A	-	N/A	3770	3500	N/A	N/A	N/A	N	ENUT
	7782-49-2	Selenium	mg/kg	0.35	378	44/83	O1 (2007)	4.1	-	12.2	378	N/A	390	N/A	N/A	N	BSTV
	7440-22-4	Silver	mg/kg	0.056	72.3	82/83	O1 (2007)	1.3	-	1.3	72.3	0.69	390	N/A	N/A	N	BSTV
	7440-23-5	Sodium	mg/kg	131	661	32/83	R1 (2007)	580	-	6160	661	430	N/A	N/A	N/A	N	ENUT
	7440-28-0	Thallium	mg/kg	0.36	2.7	31/83	O1 (2007)	3.4	-	8.7	2.7	2.4	6.3	N/A	N/A	N	HYP
	7440-62-2	Vanadium	mg/kg	5.4	56	83/83	R1 (2007)	N/A	-	N/A	56	37	390	N/A	N/A	N	BSTV
	7440-66-6	Zinc	mg/kg	52.5	65100	83/83	O1 (2007)	N/A	-	N/A	65100	240	3,833 [c]	N/A	N/A	Y	ASTV

Notes:

[1] Maximum concentration was used as the screening concentration.

[2] Background values represent Upper Prediction Limits (UPLs) from Goose Lake data. When UPLs could not be calculated due to small sample size, maximum background values were used provided that the maximum concentration was not an outlier.

[3] Screening toxicity value represents the most conservative screening criteria from USEPA Regional Screening Levels, Soil Remediation Objectives from Tiered Approach to Corrective Action Objectives (TACO), or non-TACO or provisional soil remediation objectives.

[4] For original screening toxicity value prior to adjustment for Mixture Rule, refer to Appendix E tables.

[5] Rationale codes:
HYP = Excluded based on hypothesis testing, which indicated site concentrations are not significantly different than background concentrations.
BSL = Excluded based on comparison to background value.
ASTV = Retained because screening concentration is above screening toxicity value.
BSTV = Excluded because screening concentration is below screening toxicity value.
NSTV = No screening toxicity value. Constituent is not considered to be site-related and has no associated toxicity value that would allow quantitative evaluation; therefore, this constituent is not retained as a COPC.
ENUT = Essential nutrient.
cPAH = Retained because constituent is a carcinogenic PAH greater than the background value.

[a] The screening toxicity value was adjusted for the TACO Mixture Rule. Target organ = Kidney; n = 10.
[b] The screening toxicity value was adjusted for the TACO Mixture Rule. Target organ = Liver; n = 10.
[c] The screening toxicity value was adjusted for the TACO Mixture Rule. Target organ = Circulatory System; n = 6.
[d] The screening toxicity value was adjusted for the TACO Mixture Rule. Target organ = Central Nervous System; n = 2.
[e] The screening toxicity value was adjusted for the TACO Mixture Rule. Target organ = Gastrointestinal System; n = 3.
[f] The screening toxicity value was adjusted for the TACO Mixture Rule. Target organ = Body Weight; n = 4.

Table contains detected constituents only.
ARAR/TBC = Applicable or Relevant and Appropriate Requirement / To Be Considered
COPC = Chemical of Potential Concern
PCB = polychlorinated biphenyl
SVOC = semivolatile organic compound
TAL = target analyte list
N/A = Not available
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
SIM = selective ion monitoring

Table 2.17
Occurrence, Distribution, and Selection of Chemicals of Potential Concern
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Surface and Subsurface Sediment
Exposure Area: Sediment Area 1A
Receptor: Village Park Maintenance Worker
Receptor Age: Adult

Exposure Point	CAS Number	Chemical of Potential Concern	Units	Minimum Detect	Maximum Detect	Detection Frequency	Max Detect Location	Minimum Non-Detect RANGE		Maximum Non-Detect	Concentration used for Screening [1]	Background Value [2]	Screening Toxicity Value [3,4]	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Final COPC Flag (Y/N)	Rationale for Selection or Deletion [5]
Surface and		**SVOCs**															
Subsurface Sediment	90-12-0	1-Methylnaphthalene	µg/kg	4.1	4.1	1/1	K-1.5 (2007)	N/A	-	N/A	4.1	5.7	22,000	N/A	N/A	N	BSL
	91-57-6	2-Methylnaphthalene	µg/kg	6.1	6.1	1/1	K-1.5 (2007)	N/A	-	N/A	6.1	14	310,000	N/A	N/A	N	BSL
	83-32-9	Acenaphthene	µg/kg	7.5	7.5	1/1	K-1.5 (2007)	N/A	-	N/A	7.5	16	3,400,000	N/A	N/A	N	BSL
	208-96-8	Acenaphthylene	µg/kg	6.3	6.3	1/1	K-1.5 (2007)	N/A	-	N/A	6.3	88	46,393 [a,b]	N/A	N/A	N	BSL
	120-12-7	Anthracene	µg/kg	18	18	1/1	K-1.5 (2007)	N/A	-	N/A	18	86	17,000,000	N/A	N/A	N	BSL
	56-55-3	Benzo(a)anthracene	µg/kg	47	47	1/1	K-1.5 (2007)	N/A	-	N/A	47	210	150	N/A	N/A	Y	cPAH
	50-32-8	Benzo(a)pyrene	µg/kg	46	46	1/1	K-1.5 (2007)	N/A	-	N/A	46	230	15	N/A	N/A	Y	ASTV
	205-99-2	Benzo(b)fluoranthene	µg/kg	52	52	1/1	K-1.5 (2007)	N/A	-	N/A	52	230	150	N/A	N/A	Y	cPAH
	191-24-2	Benzo(g,h,i)perylene	µg/kg	37	37	1/1	K-1.5 (2007)	N/A	-	N/A	37	200	150	N/A	N/A	N	BSL
	207-08-9	Benzo(k)fluoranthene	µg/kg	43	43	1/1	K-1.5 (2007)	N/A	-	N/A	43	210	1,500	N/A	N/A	Y	cPAH
	218-01-9	Chrysene	µg/kg	72	72	1/1	K-1.5 (2007)	N/A	-	N/A	72	250	15,000	N/A	N/A	Y	cPAH
	53-70-3	Dibenz(a,h)anthracene	µg/kg	9.4	9.4	1/1	K-1.5 (2007)	N/A	-	N/A	9.4	62	15	N/A	N/A	Y	cPAH
	206-44-0	Fluoranthene	µg/kg	130	130	1/1	K-1.5 (2007)	N/A	-	N/A	130	310	2,300,000	N/A	N/A	N	BSL
	86-73-7	Fluorene	µg/kg	9	9	1/1	K-1.5 (2007)	N/A	-	N/A	9	30	2,300,000	N/A	N/A	N	BSL
	193-39-5	Indeno(1,2,3-cd)pyrene	µg/kg	37	37	1/1	K-1.5 (2007)	N/A	-	N/A	37	220	150	N/A	N/A	Y	cPAH
	91-20-3	Naphthalene	µg/kg	6.1	6.1	1/1	K-1.5 (2007)	N/A	-	N/A	6.1	20	900 [f]	N/A	N/A	N	BSL
	85-01-8	Phenanthrene	µg/kg	80	80	1/1	K-1.5 (2007)	N/A	-	N/A	80	100	328,571 [a]	N/A	N/A	N	BSL
	129-00-0	Pyrene	µg/kg	130	130	1/1	K-1.5 (2007)	N/A	-	N/A	130	390	242,857 [a]	N/A	N/A	N	BSL
		SVOCs-SIM															
	90-12-0	1-Methylnaphthalene	µg/kg	0.98	700	6/7	SD-E	5.5	-	5.5	700	5.7	11,000 [a]	N/A	N/A	N	BSTV
	91-57-6	2-Methylnaphthalene	µg/kg	1.3	1000	6/7	SD-E	5.5	-	5.5	1000	14	155,000 [a]	N/A	N/A	N	BSTV
	83-32-9	Acenaphthene	µg/kg	1.7	2300	6/7	SD-E	5.5	-	5.5	2300	16	3,400,000	N/A	N/A	N	BSTV
	208-96-8	Acenaphthylene	µg/kg	0.93	280	7/7	SD-E	N/A	-	N/A	280	88	46,393 [a,b]	N/A	N/A	N	BSTV
	120-12-7	Anthracene	µg/kg	2.9	3200	7/7	SD-E	N/A	-	N/A	3200	86	17,000,000	N/A	N/A	N	BSTV
	56-55-3	Benzo(a)anthracene	µg/kg	9.5	4000	7/7	SD-E	N/A	-	N/A	4000	210	150	N/A	N/A	Y	ASTV
	50-32-8	Benzo(a)pyrene	µg/kg	6.9	3400	7/7	SD-E	N/A	-	N/A	3400	230	15	N/A	N/A	Y	ASTV
	205-99-2	Benzo(b)fluoranthene	µg/kg	7	2800	7/7	SD-E	N/A	-	N/A	2800	230	150	N/A	N/A	Y	ASTV
	191-24-2	Benzo(g,h,i)perylene	µg/kg	3.1	1200	7/7	SD-E	N/A	-	N/A	1200	200	150	N/A	N/A	Y	ASTV
	207-08-9	Benzo(k)fluoranthene	µg/kg	6.9	3000	7/7	SD-E	N/A	-	N/A	3000	210	1,500	N/A	N/A	Y	ASTV
	218-01-9	Chrysene	µg/kg	8.5	3500	7/7	SD-E	N/A	-	N/A	3500	250	15,000	N/A	N/A	Y	cPAH
	53-70-3	Dibenz(a,h)anthracene	µg/kg	1.2	550	7/7	SD-E	N/A	-	N/A	550	62	15	N/A	N/A	Y	ASTV
	206-44-0	Fluoranthene	µg/kg	21	11000	7/7	SD-E	N/A	-	N/A	11000	310	2,300,000	N/A	N/A	N	BSTV
	86-73-7	Fluorene	µg/kg	0.9	2200	7/7	SD-E	N/A	-	N/A	2200	30	2,300,000	N/A	N/A	N	BSTV
	193-39-5	Indeno(1,2,3-cd)pyrene	µg/kg	4.1	1700	7/7	SD-E	N/A	-	N/A	1700	220	150	N/A	N/A	Y	ASTV
	91-20-3	Naphthalene	µg/kg	1.2	2100	6/7	SD-E	5.5	-	5.5	2100	20	900 [f]	N/A	N/A	Y	ASTV
	85-01-8	Phenanthrene	µg/kg	9.9	14000	7/7	SD-E	N/A	-	N/A	14000	100	328,571 [a]	N/A	N/A	N	BSTV
	129-00-0	Pyrene	µg/kg	17	8500	7/7	SD-E	N/A	-	N/A	8500	390	242,857 [a]	N/A	N/A	N	BSTV
		PCBs															
	11097-69-1	Aroclor 1254	µg/kg	23	110	3/8	SD-D	42	-	48	110	87	220	N/A	N/A	N	BSTV
		Pesticides															
	72-54-8	4,4'-DDD	µg/kg	1.8	17	4/8	SD-E	2.3	-	4.4	17	3.3	2,000	N/A	N/A	N	BSTV
	72-55-9	4,4'-DDE	µg/kg	2.9	15	5/8	SD-D	4.3	-	4.4	15	8.6	1,400	N/A	N/A	N	BSTV
	50-29-3	4,4'-DDT	µg/kg	2.2	2.2	1/8	SD-E	2.3	-	4.8	2.2	5.7	1,700	N/A	N/A	N	BSTV
	319-84-6	Alpha-BHC	µg/kg	0.76	0.76	1/8	SD-D	1.2	-	2.5	0.76	2.0	77	N/A	N/A	N	BSTV
	5103-71-9	Alpha-Chlordane	µg/kg	1	4.5	3/8	SD-D	1.2	-	2.3	4.5	1.2	1,600	N/A	N/A	N	BSTV
	319-86-8	delta-BHC	µg/kg	0.48	0.6	2/8	SD-E	1.2	-	2.3	0.6	1.7	N/A	N/A	N/A	N	BSTV
	60-57-1	Dieldrin	µg/kg	0	1.7	1/8	SD-A	2.3	-	4.8	1.7	4.9	30	N/A	N/A	N	BSTV
	72-20-8	Endrin	µg/kg	0	1.3	1/8	SD-A	2.3	-	4.8	1.3	3.1	18,000	N/A	N/A	N	BSTV
	53494-70-5	Endrin ketone	µg/kg	2.9	2.9	1/8	SD-E	2.3	-	4.6	2.9	N/A	18,000	N/A	N/A	N	BSTV
	5103-74-2	gamma-Chlordane	µg/kg	1.7	6.5	4/8	K-1.5 (2007)	2.2	-	2.4	6.5	5.5	1,600	N/A	N/A	N	BSTV
	1024-57-3	Heptachlor epoxide	µg/kg	0.63	2.9	3/8	SD-E	2.2	-	2.5	2.9	4.2	53	N/A	N/A	N	BSTV

Table 2.17
Occurrence, Distribution, and Selection of Chemicals of Potential Concern
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Surface and Subsurface Sediment
Exposure Area: Sediment Area 1A
Receptor: Village Park Maintenance Worker
Receptor Age: Adult

Exposure Point	CAS Number	Chemical of Potential Concern	Units	Minimum Detect	Maximum Detect	Detection Frequency	Max Detect Location	Minimum Non-Detect RANGE		Maximum Non-Detect RANGE	Concentration used for Screening [1]	Background Value [2]	Screening Toxicity Value [3,4]	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Final COPC Flag (Y/N)	Rationale for Selection or Deletion [5]
Surface and		**TAL-Metals and Cyanide**															
Subsurface	7429-90-5	Aluminum	mg/kg	1970	17900	18/18	L.5-1.5 (2007)	N/A	-	N/A	17900	21000	77,000	N/A	N/A	N	BSL
Sediment	7440-36-0	Antimony	mg/kg	0.96	0.96	1/13	L.5-1.5 (2007)	7.2	-	14.3	0.96	6.6	8 [c]	N/A	N/A	N	BSL
	7440-38-2	Arsenic	mg/kg	4.2	30.5	18/18	SD-A	N/A	-	N/A	30.5	9.5	0.39	N/A	N/A	Y	ASTV
	7440-39-3	Barium	mg/kg	92.9	1380	18/18	K-1.5 (2007)	N/A	-	N/A	1380	180	786 [a]	N/A	N/A	Y	ASTV
	7440-41-7	Beryllium	mg/kg	0.13	1.1	18/18	SD-E	N/A	-	N/A	1.1	1.1	53 [e]	N/A	N/A	N	BSTV
	7440-43-9	Cadmium	mg/kg	1.7	136	17/18	SD-E	0.65	-	0.65	136	5.3	70	N/A	N/A	Y	ASTV
	7440-70-2	Calcium	mg/kg	12100	61200	18/18	SD-E	N/A	-	N/A	61200	31000	N/A	N/A	N/A	N	ENUT
	7440-47-3	Chromium	mg/kg	5.7	56.5	18/18	K-1.5 (2007)	N/A	-	N/A	56.5	64	230	N/A	N/A	N	BSL
	7440-48-4	Cobalt	mg/kg	1.9	18.2	18/18	L.5-1.5 (2007)	N/A	-	N/A	18.2	11	23	N/A	N/A	N	BSTV
	7440-50-8	Copper	mg/kg	10.3	230	18/18	L.5-1.5 (2007)	N/A	-	N/A	230	58	967 [e]	N/A	N/A	N	BSTV
	57-12-5	Cyanide	mg/kg	0.36	1.2	5/8	SD-E	0.22	-	3.4	1.2	N/A	1,600	N/A	N/A	N	BSTV
	7439-89-6	Iron	mg/kg	6160	36100	18/18	SD-E	N/A	-	N/A	36100	30000	18,333 [e]	N/A	N/A	Y	ASTV
	7439-92-1	Lead	mg/kg	8.4	1330	18/18	SD-A	N/A	-	N/A	1330	63	400	N/A	N/A	Y	ASTV
	7439-95-4	Magnesium	mg/kg	4430	32600	18/18	SD-E	N/A	-	N/A	32600	10000	N/A	N/A	N/A	N	ENUT
	7439-96-5	Manganese	mg/kg	171	1030	18/18	L.5-1.5 (2007)	N/A	-	N/A	1030	720	800 [d]	N/A	N/A	Y	ASTV
	7439-97-6	Mercury	mg/kg	0.078	2	15/18	K-1.5 (2007)	0.1	-	0.13	2	0.36	7.8	N/A	N/A	N	BSTV
	7440-02-0	Nickel	mg/kg	6.6	40.3	18/18	L.5-1.5 (2007)	N/A	-	N/A	40.3	49	1,500	N/A	N/A	N	BSL
	7440-09-7	Potassium	mg/kg	261	2770	18/18	L.5-1.5 (2007)	N/A	-	N/A	2770	3100	N/A	N/A	N/A	N	ENUT
	7782-49-2	Selenium	mg/kg	0.52	2.2	6/18	K-1.5 (2007)	4.2	-	10.8	2.2	N/A	390	N/A	N/A	N	BSTV
	7440-22-4	Silver	mg/kg	0.18	10.4	15/18	SD-A	1.3	-	1.8	10.4	1.5	390	N/A	N/A	N	BSTV
	7440-23-5	Sodium	mg/kg	188	485	7/18	L.5-1.5 (2007)	602	-	1350	485	850	N/A	N/A	N/A	N	ENUT
	7440-28-0	Thallium	mg/kg	0.38	5.2	13/18	SD-E	3.1	-	7.7	5.2	3.0	6.3	N/A	N/A	N	BSTV
	7440-62-2	Vanadium	mg/kg	8.4	53.8	18/18	SD-A	N/A	-	N/A	53.8	37	390	N/A	N/A	N	BSTV
	7440-66-6	Zinc	mg/kg	52.5	9240	18/18	L.5-1.5 (2007)	N/A	-	N/A	9240	320	5,750 [c]	N/A	N/A	Y	ASTV

Notes:
[1] Maximum concentration was used as the screening concentration.
[2] Background values represent Upper Prediction Limits (UPLs) from Goose Lake data. When UPLs could not be calculated due to small sample size, maximum background values were used provided that the maximum concentration was not an outlier.
[3] Screening toxicity value represents the most conservative screening criteria from USEPA Regional Screening Levels, Soil Remediation Objectives from Tiered Approach to Corrective Action Objectives (TACO), or non-TACO or provisional soil remediation objectives.
[4] For original screening toxicity value prior to adjustment for Mixture Rule, refer to Appendix E tables.
[5] Rationale codes:
BSL = Excluded based on comparison to background value.
ASTV = Retained because screening concentration is above screening toxicity value.
BSTV = Excluded because screening concentration is below screening toxicity value.
ENUT = Essential nutrient.
cPAH = Retained because constituent is a carcinogenic PAH greater than the background value.
[a] The screening toxicity value was adjusted for the TACO Mixture Rule. Target organ = Kidney; n = 7.
[b] The screening toxicity value was adjusted for the TACO Mixture Rule. Target organ = Liver; n = 7.
[c] The screening toxicity value was adjusted for the TACO Mixture Rule. Target organ = Circulatory System; n = 4.
[d] The screening toxicity value was adjusted for the TACO Mixture Rule. Target organ = Central Nervous System; n = 2.
[e] The screening toxicity value was adjusted for the TACO Mixture Rule. Target organ = Gastrointestinal System; n = 3.
[f] The screening toxicity value was adjusted for the TACO Mixture Rule. Target organ = Body Weight; n = 2.
Table contains detected constituents only.
ARAR/TBC = Applicable or Relevant and Appropriate Requirement / To Be Considered
COPC = Chemical of Potential Concern
PCB = polychlorinated biphenyl
SVOC = semivolatile organic compound
TAL = target analyte list
N/A = Not available
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
SIM = selective ion monitoring

Table 2.18
Occurrence, Distribution, and Selection of Chemicals of Potential Concern
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Surface and Subsurface Sediment
Exposure Area: Sediment Area 1B
Receptor: Utility Maintenance Worker
Receptor Age: Adult

Exposure Point	CAS Number	Chemical of Potential Concern	Units	Minimum Detect	Maximum Detect	Detection Frequency	Max Detect Location	Minimum Non-Detect RANGE		Maximum Non-Detect RANGE	Concentration used for Screening [1]	Background Value [2]	Screening Toxicity Value [3,4]	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Final COPC Flag (Y/N)	Rationale for Selection or Deletion [5]
Surface and		**SVOCs**															
Subsurface Sediment	90-12-0	1-Methylnaphthalene	µg/kg	2700	2700	1/1	O1 (2007)	N/A	-	N/A	2700	5.7	22,000	N/A	N/A	N	BSTV
	91-57-6	2-Methylnaphthalene	µg/kg	3400	3400	1/1	O1 (2007)	N/A	-	N/A	3400	14	310,000	N/A	N/A	N	BSTV
	83-32-9	Acenaphthene	µg/kg	770	770	1/1	O1 (2007)	N/A	-	N/A	770	16	3,400,000	N/A	N/A	N	BSTV
	208-96-8	Acenaphthylene	µg/kg	620	620	1/1	O1 (2007)	N/A	-	N/A	620	88	28,750 [a,b]	N/A	N/A	N	BSTV
	120-12-7	Anthracene	µg/kg	1100	1100	1/1	O1 (2007)	N/A	-	N/A	1100	86	17,000,000	N/A	N/A	N	BSTV
	56-55-3	Benzo(a)anthracene	µg/kg	390	390	1/1	O1 (2007)	N/A	-	N/A	390	210	150	N/A	N/A	Y	ASTV
	50-32-8	Benzo(a)pyrene	µg/kg	170	170	1/1	O1 (2007)	N/A	-	N/A	170	230	15	N/A	N/A	Y	cPAH
	205-99-2	Benzo(b)fluoranthene	µg/kg	300	300	1/1	O1 (2007)	N/A	-	N/A	300	230	150	N/A	N/A	Y	ASTV
	191-24-2	Benzo(g,h,i)perylene	µg/kg	46	46	1/1	O1 (2007)	N/A	-	N/A	46	200	150	N/A	N/A	N	BSL
	207-08-9	Benzo(k)fluoranthene	µg/kg	160	160	1/1	O1 (2007)	N/A	-	N/A	160	210	1,500	N/A	N/A	Y	cPAH
	218-01-9	Chrysene	µg/kg	560	560	1/1	O1 (2007)	N/A	-	N/A	560	250	15,000	N/A	N/A	Y	cPAH
	53-70-3	Dibenz(a,h)anthracene	µg/kg	28	28	1/1	O1 (2007)	N/A	-	N/A	28	62	15	N/A	N/A	Y	cPAH
	206-44-0	Fluoranthene	µg/kg	1200	1200	1/1	O1 (2007)	N/A	-	N/A	1200	310	2,300,000	N/A	N/A	N	BSTV
	86-73-7	Fluorene	µg/kg	2700	2700	1/1	O1 (2007)	N/A	-	N/A	2700	30	2,300,000	N/A	N/A	N	BSTV
	193-39-5	Indeno(1,2,3-cd)pyrene	µg/kg	48	48	1/1	O1 (2007)	N/A	-	N/A	48	220	150	N/A	N/A	Y	cPAH
	91-20-3	Naphthalene	µg/kg	2800	2800	1/1	O1 (2007)	N/A	-	N/A	2800	20	450 [f]	N/A	N/A	Y	ASTV
	85-01-8	Phenanthrene	µg/kg	5200	5200	1/1	O1 (2007)	N/A	-	N/A	5200	100	230,000 [a]	N/A	N/A	N	BSTV
	129-00-0	Pyrene	µg/kg	950	950	1/1	O1 (2007)	N/A	-	N/A	950	390	170,000 [a]	N/A	N/A	N	BSTV
		Pesticides															
	72-55-9	4,4'-DDE	µg/kg	11	11	1/1	O1 (2007)	N/A	-	N/A	11	8.6	1,400	N/A	N/A	N	BSTV
	50-29-3	4,4'-DDT	µg/kg	10	10	1/1	O1 (2007)	N/A	-	N/A	10	5.7	1,700	N/A	N/A	N	BSTV
	319-85-7	Beta-BHC	µg/kg	3.4	3.4	1/1	O1 (2007)	N/A	-	N/A	3.4	1.7	270	N/A	N/A	N	BSTV
	319-86-8	delta-BHC	µg/kg	14	14	1/1	O1 (2007)	N/A	-	N/A	14	N/A	N/A	N/A	N/A	N	NSTV
	60-57-1	Dieldrin	µg/kg	5.1	5.1	1/1	O1 (2007)	N/A	-	N/A	5.1	4.9	30	N/A	N/A	N	BSTV
	959-98-8	Endosulfan I	µg/kg	5.2	5.2	1/1	O1 (2007)	N/A	-	N/A	5.2	N/A	370,000	N/A	N/A	N	BSTV
	33213-65-9	Endosulfan II	µg/kg	12	12	1/1	O1 (2007)	N/A	-	N/A	12	N/A	370,000	N/A	N/A	N	BSTV
	72-20-8	Endrin	µg/kg	8.2	8.2	1/1	O1 (2007)	N/A	-	N/A	8.2	3.1	18,000	N/A	N/A	N	BSTV
	53494-70-5	Endrin ketone	µg/kg	11	11	1/1	O1 (2007)	N/A	-	N/A	11	N/A	18,000	N/A	N/A	N	BSTV
	58-89-9	gamma-BHC (Lindane)	µg/kg	4.9	4.9	1/1	O1 (2007)	N/A	-	N/A	4.9	N/A	6 [a,b]	N/A	N/A	N	BSTV
	76-44-8	Heptachlor	µg/kg	4.8	4.8	1/1	O1 (2007)	N/A	-	N/A	4.8	N/A	13 [b]	N/A	N/A	N	BSTV
	1024-57-3	Heptachlor epoxide	µg/kg	8.4	8.4	1/1	O1 (2007)	N/A	-	N/A	8.4	4.2	53	N/A	N/A	N	BSTV
	72-43-5	Methoxychlor	µg/kg	58	58	1/1	O1 (2007)	N/A	-	N/A	58	N/A	310,000	N/A	N/A	N	BSTV
		TAL-Metals and Cyanide															
	7429-90-5	Aluminum	mg/kg	6220	16500	9/9	P1 (2007)	N/A	-	N/A	16500	21000	77,000	N/A	N/A	N	BSL
	7440-38-2	Arsenic	mg/kg	2.5	113	9/9	O1 (2007)	N/A	-	N/A	113	9.5	0.39	N/A	N/A	Y	ASTV
	7440-39-3	Barium	mg/kg	372	3270	9/9	O1 (2007)	N/A	-	N/A	3270	180	550 [a]	N/A	N/A	Y	ASTV
	7440-41-7	Beryllium	mg/kg	0.44	1.3	9/9	O1 (2007)	N/A	-	N/A	1.3	1.1	53 [e]	N/A	N/A	N	BSTV
	7440-43-9	Cadmium	mg/kg	0.58	864	9/9	P1 (2007)	N/A	-	N/A	864	5.3	70	N/A	N/A	Y	ASTV
	7440-70-2	Calcium	mg/kg	20700	194000	9/9	N.5-1 (2007)	N/A	-	N/A	194000	31000	N/A	N/A	N/A	N	ENUT
	7440-47-3	Chromium	mg/kg	9.8	78.9	9/9	P1 (2007)	N/A	-	N/A	78.9	64	230	N/A	N/A	N	BSTV
	7440-48-4	Cobalt	mg/kg	3.2	226	9/9	O1 (2007)	N/A	-	N/A	226	11	23	N/A	N/A	Y	ASTV
	7440-50-8	Copper	mg/kg	7.5	6300	9/9	O1 (2007)	N/A	-	N/A	6300	58	967 [e]	N/A	N/A	Y	ASTV
	57-12-5	Cyanide	mg/kg	0.58	0.58	1/1	O1 (2007)	N/A	-	N/A	0.58	N/A	1,600	N/A	N/A	N	BSTV
	7439-89-6	Iron	mg/kg	24400	75500	9/9	O1 (2007)	N/A	-	N/A	75500	31000	18,333 [e]	N/A	N/A	Y	ASTV
	7439-92-1	Lead	mg/kg	7	12900	9/9	O1 (2007)	N/A	-	N/A	12900	63	400	N/A	N/A	Y	ASTV
	7439-95-4	Magnesium	mg/kg	4610	8780	9/9	P1 (2007)	N/A	-	N/A	8780	10000	N/A	N/A	N/A	N	ENUT
	7439-96-5	Manganese	mg/kg	669	4700	9/9	O1 (2007)	N/A	-	N/A	4700	720	400 [d]	N/A	N/A	Y	ASTV
	7439-97-6	Mercury	mg/kg	0.34	32.1	8/9	O1 (2007)	0.16	-	0.16	32.1	0.36	7.8	N/A	N/A	Y	ASTV
	7440-02-0	Nickel	mg/kg	9.9	55	9/9	P1 (2007)	N/A	-	N/A	55	49	1,500	N/A	N/A	N	BSTV
	7440-09-7	Potassium	mg/kg	691	2120	9/9	P1 (2007)	N/A	-	N/A	2120	3100	N/A	N/A	N/A	N	ENUT

Table 2.18
Occurrence, Distribution, and Selection of Chemicals of Potential Concern
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Surface and Subsurface Sediment
Exposure Area: Sediment Area 1B
Receptor: Utility Maintenance Worker
Receptor Age: Adult

Exposure Point	CAS Number	Chemical of Potential Concern	Units	Minimum Detect	Maximum Detect	Detection Frequency	Max Detect Location	Minimum Non-Detect RANGE		Maximum Non-Detect RANGE	Concentration used for Screening [1]	Background Value [2]	Screening Toxicity Value [3,4]	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Final COPC Flag (Y/N)	Rationale for Selection or Deletion [5]
Surface and Subsurface Sediment	7782-49-2	Selenium	mg/kg	5	378	7/9	O1 (2007)	5.9	-	6.3	378	N/A	390	N/A	N/A	N	BSTV
	7440-22-4	Silver	mg/kg	5.7	72.3	7/9	O1 (2007)	1.7	-	1.8	72.3	1.5	390	N/A	N/A	N	BSTV
	7440-23-5	Sodium	mg/kg	276	5270	6/9	O1 (2007)	856	-	6160	5270	850	N/A	N/A	N/A	N	ENUT
	7440-28-0	Thallium	mg/kg	1.8	3.9	6/9	O1 (2007)	5.4	-	5.9	3.9	3.0	6.3	N/A	N/A	N	BSTV
	7440-62-2	Vanadium	mg/kg	15.1	43.4	9/9	O1 (2007)	N/A	-	N/A	43.4	39	390	N/A	N/A	N	BSTV
	7440-66-6	Zinc	mg/kg	39.6	65100	9/9	O1 (2007)	N/A	-	N/A	65100	320	4,600 [c]	N/A	N/A	Y	ASTV

Notes:
[1] Maximum concentration was used as the screening concentration.
[2] Background values represent Upper Prediction Limits (UPLs) from Goose Lake data. When UPLs could not be calculated due to small sample size, maximum background values were used provided that the maximum concentration was not an outlier.
[3] Screening toxicity value represents the most conservative screening criteria from USEPA Regional Screening Levels, Soil Remediation Objectives from Tiered Approach to Corrective Action Objectives (TACO), or non-TACO or provisional soil remediation objectives.
[4] For original screening toxicity value prior to adjustment for Mixture Rule, refer to Appendix E tables.
[5] Rationale codes:
BSL = Excluded based on comparison to background value.
ASTV = Retained because screening concentration is above screening toxicity value.
BSTV = Excluded because screening concentration is below screening toxicity value.
ENUT = Essential nutrient.
cPAH = Retained because constituent is a carcinogenic PAH greater than the background value.
[a] The screening toxicity value was adjusted for the TACO Mixture Rule. Target organ = Kidney; n = 10.
[b] The screening toxicity value was adjusted for the TACO Mixture Rule. Target organ = Liver; n = 8.
[c] The screening toxicity value was adjusted for the TACO Mixture Rule. Target organ = Circulatory System; n = 5.
[d] The screening toxicity value was adjusted for the TACO Mixture Rule. Target organ = Central Nervous System; n = 4.
[e] The screening toxicity value was adjusted for the TACO Mixture Rule. Target organ = Gastrointestinal System; n = 3.
[f] The screening toxicity value was adjusted for the TACO Mixture Rule. Target organ = Body Weight; n = 4.
Table contains detected constituents only.
ARAR/TBC = Applicable or Relevant and Appropriate Requirement / To Be Considered
COPC = Chemical of Potential Concern
SVOC = semivolatile organic compound
TAL = target analyte list
N/A = Not available
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram

Table 2.19
Occurrence, Distribution, and Selection of Chemicals of Potential Concern
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Surface and Subsurface Sediment
Exposure Area: Area 2
Receptor: Wildlife Workers and Hunters
Receptor Age: Adult

Exposure Point	CAS Number	Chemical of Potential Concern	Units	Minimum Detect	Maximum Detect	Detection Frequency	Max Detect Location	Minimum Non-Detect RANGE		Maximum Non-Detect RANGE	Concentration used for Screening [1]	Background Value [2]	Screening Toxicity Value [3,4]	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Final COPC Flag (Y/N)	Rationale for Selection or Deletion [5]
Surface and		**SVOCs**															
Subsurface Sediment	90-12-0	1-Methylnaphthalene	µg/kg	1.9	7.9	11/11	D7 (2007),D9 (2007)	N/A	-	N/A	7.9	5.7	22,000	N/A	N/A	N	BSTV
	91-57-6	2-Methylnaphthalene	µg/kg	3.5	16	11/11	D5 (2007)	N/A	-	N/A	16	14	310,000	N/A	N/A	N	BSTV
	83-32-9	Acenaphthene	µg/kg	3.5	19	11/11	K2 (2007)	N/A	-	N/A	19	16	3,400,000	N/A	N/A	N	BSTV
	208-96-8	Acenaphthylene	µg/kg	8.5	63	11/11	D9 (2007)	N/A	-	N/A	63	88	28,750 [a,b]	N/A	N/A	N	BSL
	120-12-7	Anthracene	µg/kg	12	61	11/11	D9 (2007)	N/A	-	N/A	61	86	17,000,000	N/A	N/A	N	BSL
	56-55-3	Benzo(a)anthracene	µg/kg	45	260	11/11	D9 (2007)	N/A	-	N/A	260	210	150	N/A	N/A	Y	ASTV
	50-32-8	Benzo(a)pyrene	µg/kg	50	320	11/11	D9 (2007)	N/A	-	N/A	320	230	15	N/A	N/A	Y	ASTV
	205-99-2	Benzo(b)fluoranthene	µg/kg	52	650	11/11	D9 (2007)	N/A	-	N/A	650	230	150	N/A	N/A	Y	ASTV
	191-24-2	Benzo(g,h,i)perylene	µg/kg	40	280	11/11	D9 (2007)	N/A	-	N/A	280	200	150	N/A	N/A	Y	ASTV
	207-08-9	Benzo(k)fluoranthene	µg/kg	39	510	11/11	D9 (2007)	N/A	-	N/A	510	210	1,500	N/A	N/A	Y	cPAH
	218-01-9	Chrysene	µg/kg	56	370	11/11	D9 (2007)	N/A	-	N/A	370	250	15,000	N/A	N/A	Y	cPAH
	53-70-3	Dibenz(a,h)anthracene	µg/kg	12	74	11/11	D9 (2007)	N/A	-	N/A	74	62	15	N/A	N/A	Y	ASTV
	206-44-0	Fluoranthene	µg/kg	91	530	11/11	D9 (2007)	N/A	-	N/A	530	310	2,300,000	N/A	N/A	N	BSTV
	86-73-7	Fluorene	µg/kg	5.2	27	11/11	K2 (2007)	N/A	-	N/A	27	30	2,300,000	N/A	N/A	N	BSL
	193-39-5	Indeno(1,2,3-cd)pyrene	µg/kg	37	290	11/11	D9 (2007)	N/A	-	N/A	290	220	150	N/A	N/A	Y	ASTV
	91-20-3	Naphthalene	µg/kg	12	14	5/11	D5 (2007),D7 (2007),D9 (2007)	13	-	24	14	20	900 [f]	N/A	N/A	N	BSL
	85-01-8	Phenanthrene	µg/kg	35	190	11/11	D9 (2007)	N/A	-	N/A	190	100	287,500 [a]	N/A	N/A	N	BSTV
	129-00-0	Pyrene	µg/kg	85	520	11/11	D9 (2007)	N/A	-	N/A	520	390	212,500 [a]	N/A	N/A	N	BSTV
		PCBs															
	11097-69-1	Aroclor 1254	µg/kg	21	95	8/11	L3 (2007)	15	-	29	95	87	220	N/A	N/A	N	BSTV
	11096-82-5	Aroclor 1260	µg/kg	33	34	2/11	D7 (2007)	15	-	29	34	N/A	220	N/A	N/A	N	BSTV
		Pesticides															
	72-54-8	4,4'-DDD	µg/kg	0.73	2.3	5/11	L3 (2007)	3.4	-	5.7	2.3	3.3	2,000	N/A	N/A	N	BSTV
	72-55-9	4,4'-DDE	µg/kg	1.7	11	11/11	G8 (2007),J4 (2007),J6 (2007)	N/A	-	N/A	11	8.6	1,400	N/A	N/A	N	BSTV
	50-29-3	4,4'-DDT	µg/kg	1.8	4	2/11	F7 (2007)	2.9	-	5.7	4	5.7	1,700	N/A	N/A	N	BSTV
	309-00-2	Aldrin	µg/kg	1.5	2	2/11	F7 (2007)	1.8	-	2.9	2	N/A	29	N/A	N/A	N	BSTV
	319-84-6	Alpha-BHC	µg/kg	0.37	0.98	4/11	K2 (2007)	1.5	-	2.7	0.98	2.0	77	N/A	N/A	N	BSTV
	5103-71-9	Alpha-Chlordane	µg/kg	1.7	2.6	3/11	F7 (2007)	1.5	-	2.9	2.6	1.2	1,600	N/A	N/A	N	BSTV
	319-85-7	Beta-BHC	µg/kg	1.8	4.1	7/11	J4 (2007)	0.75	-	1.5	4.1	1.7	270	N/A	N/A	N	BSTV
	319-86-8	delta-BHC	µg/kg	0.85	15	5/11	K2 (2007)	1.5	-	2.4	15	N/A	270	N/A	N/A	N	BSTV
	60-57-1	Dieldrin	µg/kg	1.3	4.1	5/11	D7 (2007)	3.4	-	5.7	4.1	4.9	30	N/A	N/A	N	BSTV
	72-20-8	Endrin	µg/kg	1.7	1.7	1/11	F7 (2007)	2.9	-	5.7	1.7	3.1	18,000	N/A	N/A	N	BSTV
	7421-93-4	Endrin aldehyde	µg/kg	1.7	3.8	4/11	J4 (2007)	2.9	-	5.7	3.8	3.1	18,000	N/A	N/A	N	BSTV
	58-89-9	gamma-BHC (Lindane)	µg/kg	0.6	4.9	2/11	K2 (2007)	1.5	-	2.9	4.9	N/A	6 [a,b]	N/A	N/A	N	BSTV
	5103-74-2	gamma-Chlordane	µg/kg	0.66	12	9/11	F7 (2007),J4 (2007)	1.8	-	2.1	12	5.5	1,600	N/A	N/A	N	BSTV
	76-44-8	Heptachlor	µg/kg	0.45	12	4/11	K2 (2007)	1.5	-	2.9	12	N/A	100	N/A	N/A	N	BSTV
	1024-57-3	Heptachlor epoxide	µg/kg	0.79	3.6	4/11	J4 (2007)	1.8	-	2.9	3.6	4.2	53	N/A	N/A	N	BSTV
		TAL-Metals and Cyanide															
	7429-90-5	Aluminum	mg/kg	997	23200	118/118	K4 (2007)	N/A	-	N/A	23200	21000	77,000	N/A	N/A	N	BSTV
	7440-36-0	Antimony	mg/kg	0.64	1.1	3/56	K.5-2 (2007)	0.2	-	17	1.1	6.6	8 [c]	N/A	N/A	N	BSL
	7440-38-2	Arsenic	mg/kg	1.5	17.3	118/118	F4 (2007)	N/A	-	N/A	17.3	9.5	0.39	N/A	N/A	Y	ASTV
	7440-39-3	Barium	mg/kg	50.2	1730	118/118	K2 (2007)	N/A	-	N/A	1730	180	688 [a]	N/A	N/A	Y	ASTV
	7440-41-7	Beryllium	mg/kg	0.14	1.2	118/118	J4 (2007),J5 (2007),K3 (2007),K4 (2007)	N/A	-	N/A	1.2	1.1	53 [e]	N/A	N/A	N	BSTV
	7440-43-9	Cadmium	mg/kg	0.36	63.1	118/118	K3 (2007)	N/A	-	N/A	63.1	5.3	70	N/A	N/A	N	BSTV
	7440-70-2	Calcium	mg/kg	4370	48900	118/118	H7 (2007)	N/A	-	N/A	48900	31000	N/A	N/A	N/A	N	ENUT
	7440-47-3	Chromium	mg/kg	3.3	83.4	118/118	E7 (2007)	N/A	-	N/A	83.4	64	230	N/A	N/A	N	BSTV
	7440-48-4	Cobalt	mg/kg	1.8	18.1	118/118	J4 (2007)	N/A	-	N/A	18.1	11	23	N/A	N/A	N	BSTV
	7440-50-8	Copper	mg/kg	10.9	177	118/118	L2 (2007)	N/A	-	N/A	177	58	967 [e]	N/A	N/A	N	BSTV
	57-12-5	Cyanide	mg/kg	0.47	0.69	3/11	K2 (2007)	0.35	-	7	0.69	N/A	1,600	N/A	N/A	N	BSTV
	7439-89-6	Iron	mg/kg	4530	35700	118/118	J4 (2007)	N/A	-	N/A	35700	30000	18,333 [e]	N/A	N/A	Y	ASTV
	7439-92-1	Lead	mg/kg	12.2	139	118/118	K2 (2007)	N/A	-	N/A	139	63	400	N/A	N/A	N	BSTV

Table 2.19
Occurrence, Distribution, and Selection of Chemicals of Potential Concern
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Surface and Subsurface Sediment
Exposure Area: Area 2
Receptor: Wildlife Workers and Hunters
Receptor Age: Adult

Exposure Point	CAS Number	Chemical of Potential Concern	Units	Minimum Detect	Maximum Detect	Detection Frequency	Max Detect Location	Minimum Non-Detect RANGE		Maximum Non-Detect RANGE	Concentration used for Screening [1]	Background Value [2]	Screening Toxicity Value [3,4]	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Final COPC Flag (Y/N)	Rationale for Selection or Deletion [5]
Surface and Subsurface Sediment	7439-95-4	Magnesium	mg/kg	4170	23600	118/118	J3 (2007)	N/A	-	N/A	23600	10000	N/A	N/A	N/A	N	ENUT
	7439-96-5	Manganese	mg/kg	258	1010	118/118	J6 (2007)	N/A	-	N/A	1010	720	800 [d]	N/A	N/A	Y	ASTV
	7439-97-6	Mercury	mg/kg	0.062	1.1	96/118	K2 (2007)	0.12	-	0.37	1.1	0.36	7.8	N/A	N/A	N	BSTV
	7440-02-0	Nickel	mg/kg	12	70.2	117/118	C6 (2007)	4.6	-	4.6	70.2	49	1,500	N/A	N/A	N	BSTV
	7440-09-7	Potassium	mg/kg	161	3300	118/118	I5 (2007)	N/A	-	N/A	3300	3100	N/A	N/A	N/A	N	ENUT
	7782-49-2	Selenium	mg/kg	0.3	1.4	47/118	H3 (2007),L3 (2007)	4.1	-	10.8	1.4	N/A	390	N/A	N/A	N	BSTV
	7440-22-4	Silver	mg/kg	0.056	1.9	114/118	K3 (2007)	1.3	-	1.5	1.9	1.5	390	N/A	N/A	N	BSTV
	7440-23-5	Sodium	mg/kg	192	434	23/118	L2 (2007)	580	-	1420	434	850	N/A	N/A	N/A	N	ENUT
	7440-28-0	Thallium	mg/kg	0.36	1.9	38/118	I5 (2007)	3	-	7.1	1.9	3.0	6.3	N/A	N/A	N	BSL
	7440-62-2	Vanadium	mg/kg	5.4	41.7	118/118	J4 (2007)	N/A	-	N/A	41.7	37	390	N/A	N/A	N	BSTV
	7440-66-6	Zinc	mg/kg	87.5	7690	118/118	K3 (2007)	N/A	-	N/A	7690	310	5,750 [c]	N/A	N/A	Y	ASTV

Notes:
[1] Maximum concentration was used as the screening concentration.
[2] Background values represent Upper Prediction Limits (UPLs) from Goose Lake data. When UPLs could not be calculated due to small sample size, maximum background values were used provided that the maximum concentration was not an outlier.
[3] Screening toxicity value represents the most conservative screening criteria from USEPA Regional Screening Levels, Soil Remediation Objectives from Tiered Approach to Corrective Action Objectives (TACO), or non-TACO or provisional soil remediation objectives.
[4] For original screening toxicity value prior to adjustment for Mixture Rule, refer to Appendix E tables.
[5] Rationale codes:
BSL = Excluded based on comparison to background value.
ASTV = Retained because screening concentration is above screening toxicity value.
BSTV = Excluded because screening concentration is below screening toxicity value.
NSTV = No screening toxicity value. Constituent is not considered to be site-related and has no associated toxicity value that would allow quantitative evaluation; therefore, this constituent is not retained as a COPC.
ENUT = Essential nutrient.
cPAH = Retained because constituent is a carcinogenic PAH greater than the background value.
[a] The screening toxicity value was adjusted for the TACO Mixture Rule. Target organ = Kidney; n = 8.
[b] The screening toxicity value was adjusted for the TACO Mixture Rule. Target organ = Liver; n = 10.
[c] The screening toxicity value was adjusted for the TACO Mixture Rule. Target organ = Circulatory System; n = 4.
[d] The screening toxicity value was adjusted for the TACO Mixture Rule. Target organ = Central Nervous System; n = 2.
[e] The screening toxicity value was adjusted for the TACO Mixture Rule. Target organ = Gastrointestinal System; n = 3.
[f] The screening toxicity value was adjusted for the TACO Mixture Rule. Target organ = Body Weight; n = 2.
Table contains detected constituents only.
ARAR/TBC = Applicable or Relevant and Appropriate Requirement / To Be Considered
COPC = Chemical of Potential Concern
PCB = polychlorinated biphenyl
SVOC = semivolatile organic compound
TAL = target analyte list
N/A = Not available
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram

Table 2.20
Occurrence, Distribution, and Selection of Chemicals of Potential Concern
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Seep Sediment
Exposure Area: Floodplain Area 1A
Receptor: Village Park Recreational User, Boater, Boat Angler, Shoreline Angler, and Village Park Maintenance Worker
Receptor Age: Adult and Child (maintenance worker = adult only)

Exposure Point	CAS Number	Chemical of Potential Concern	Units	Minimum Detect	Maximum Detect	Detection Frequency	Max Detect Location	Minimum Non-Detect RANGE		Maximum Non-Detect RANGE	Concentration used for Screening [1]	Background Value [2]	Screening Toxicity Value [3,4]	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Final COPC Flag (Y/N)	Rationale for Selection or Deletion [5]
Seep Sediment		**TAL-Metals and Cyanide**															
	7429-90-5	Aluminum	mg/kg	1730	3160	3/3	SP-03	N/A	-	N/A	3160	21000	77,000	N/A	N/A	N	BSL
	7440-38-2	Arsenic	mg/kg	2.4	9.6	3/3	SP-01	N/A	-	N/A	9.6	7.3	0.39	N/A	N/A	Y	ASTV
	7440-39-3	Barium	mg/kg	19.1	91.7	3/3	SP-01	N/A	-	N/A	91.7	170	1,833 [a]	N/A	N/A	N	BSL
	7440-41-7	Beryllium	mg/kg	0.08	0.3	3/3	SP-03	N/A	-	N/A	0.3	1.0	530 [b]	N/A	N/A	N	BSL
	7440-43-9	Cadmium	mg/kg	0.54	3.7	3/3	SP-01	N/A	-	N/A	3.7	2.7	70	N/A	N/A	N	BSTV
	7440-70-2	Calcium	mg/kg	70700	240000	3/3	SP-03	N/A	-	N/A	240000	43000	N/A	N/A	N/A	N	ENUT
	7440-47-3	Chromium	mg/kg	4.5	6.4	3/3	SP-03	N/A	-	N/A	6.4	46	230	N/A	N/A	N	BSL
	7440-48-4	Cobalt	mg/kg	2.2	4	3/3	SP-03	N/A	-	N/A	4	11	23	N/A	N/A	N	BSL
	7440-50-8	Copper	mg/kg	6.3	31.9	3/3	SP-01	N/A	-	N/A	31.9	47	967 [b]	N/A	N/A	N	BSL
	7439-89-6	Iron	mg/kg	5490	11900	3/3	SP-01	N/A	-	N/A	11900	30000	18,333 [b]	N/A	N/A	N	BSL
	7439-92-1	Lead	mg/kg	13.9	125	3/3	SP-01	N/A	-	N/A	125	44	400	N/A	N/A	N	BSTV
	7439-95-4	Magnesium	mg/kg	6160	116000	3/3	SP-03	N/A	-	N/A	116000	12000	N/A	N/A	N/A	N	ENUT
	7439-96-5	Manganese	mg/kg	269	434	3/3	SP-01	N/A	-	N/A	434	790	1,600	N/A	N/A	N	BSL
	7439-97-6	Mercury	mg/kg	0.89	0.89	1/3	SP-01	0.11	-	0.26	0.89	0.26	7.8	N/A	N/A	N	BSTV
	7440-02-0	Nickel	mg/kg	5.4	9	3/3	SP-03	N/A	-	N/A	9	38	1,500	N/A	N/A	N	BSL
	7440-09-7	Potassium	mg/kg	209	623	3/3	SP-03	N/A	-	N/A	623	3500	N/A	N/A	N/A	N	ENUT
	7440-22-4	Silver	mg/kg	0.077	0.91	3/3	SP-01	N/A	-	N/A	0.91	0.69	390	N/A	N/A	N	BSTV
	7440-28-0	Thallium	mg/kg	0.47	1.2	2/3	SP-01	8	-	8	1.2	2.4	6.3	N/A	N/A	N	BSL
	7440-62-2	Vanadium	mg/kg	5.8	10.8	3/3	SP-03	N/A	-	N/A	10.8	37	390	N/A	N/A	N	BSTV
	7440-66-6	Zinc	mg/kg	117	1490	3/3	SP-01	N/A	-	N/A	1490	140	23,000	N/A	N/A	N	BSTV

Notes:
[1] Maximum concentration was used as the screening concentration.
[2] Background values represent Upper Prediction Limits (UPLs) from Goose Lake data. When UPLs could not be calculated due to small sample size, maximum background values were used provided that the maximum concentration was not an outlier.
[3] Screening toxicity value represents the most conservative screening criteria from USEPA Regional Screening Levels, Soil Remediation Objectives from Tiered Approach to Corrective Action Objectives (TACO), or non-TACO or provisional soil remediation objectives.
[4] For original screening toxicity value prior to adjustment for Mixture Rule, refer to Appendix E tables.
[5] Rationale codes:
BSL = Excluded based on comparison to background value.
ASTV = Retained because screening concentration is above screening toxicity value.
BSTV = Excluded because screening concentration is below screening toxicity value.
ENUT = Essential nutrient.
[a] The screening toxicity value was adjusted for the TACO Mixture Rule. Target organ = Kidney; n = 3.
[b] The screening toxicity value was adjusted for the TACO Mixture Rule. Target organ = Gastrointestinal System; n = 3.
Table contains detected constituents only.
ARAR/TBC = Applicable or Relevant and Appropriate Requirement / To Be Considered
COPC = Chemical of Potential Concern
TAL = target analyte list
N/A = Not available
mg/kg = milligram per kilogram

Table 2.21
Occurrence, Distribution, and Selection of Chemicals of Potential Concern
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Seep Sediment
Exposure Area: Floodplain Area 1B
Receptor: Trespasser, Utility Maintenance Worker
Receptor Age: Adolescent (trespasser), Adult (utility maintenance worker)

Exposure Point	CAS Number	Chemical of Potential Concern	Units	Minimum Detect	Maximum Detect	Detection Frequency	Max Detect Location	Minimum Non-Detect RANGE		Maximum Non-Detect RANGE	Concentration used for Screening [1]	Background Value [2]	Screening Toxicity Value [3,4]	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Final COPC Flag (Y/N)	Rationale for Selection or Deletion [5]
Seep Sediment		**TAL-Metals and Cyanide**															
	7429-90-5	Aluminum	mg/kg	2010	12400	6/6	SP-08	N/A	-	N/A	12400	21000	77,000	N/A	N/A	N	BSL
	7440-38-2	Arsenic	mg/kg	4.5	45.5	6/6	SP-07	N/A	-	N/A	45.5	7.3	0.39	N/A	N/A	Y	ASTV
	7440-39-3	Barium	mg/kg	123	1090	6/6	SP-07	N/A	-	N/A	1090	170	1,833 [a]	N/A	N/A	N	BSTV
	7440-41-7	Beryllium	mg/kg	0.16	0.76	6/6	SP-08	N/A	-	N/A	0.76	1.0	53 [b]	N/A	N/A	N	BSL
	7440-43-9	Cadmium	mg/kg	8.4	1420	6/6	SP-04	N/A	-	N/A	1420	2.7	70	N/A	N/A	Y	ASTV
	7440-70-2	Calcium	mg/kg	17100	179000	6/6	SP-04	N/A	-	N/A	179000	43000	N/A	N/A	N/A	N	ENUT
	7440-47-3	Chromium	mg/kg	4.6	39.8	6/6	SP-08	N/A	-	N/A	39.8	46	230	N/A	N/A	N	BSL
	7440-48-4	Cobalt	mg/kg	0.39	12.8	6/6	SP-07	N/A	-	N/A	12.8	11	23	N/A	N/A	N	BSTV
	7440-50-8	Copper	mg/kg	21.2	217	6/6	SP-08	N/A	-	N/A	217	47	967 [b]	N/A	N/A	N	BSTV
	7439-89-6	Iron	mg/kg	5720	32400	6/6	SP-07	N/A	-	N/A	32400	30000	18,333 [b]	N/A	N/A	N	BSTV
	7439-92-1	Lead	mg/kg	130	711	6/6	SP-07	N/A	-	N/A	711	44	400	N/A	N/A	Y	ASTV
	7439-95-4	Magnesium	mg/kg	4870	45300	6/6	SP-04	N/A	-	N/A	45300	12000	N/A	N/A	N/A	N	ENUT
	7439-96-5	Manganese	mg/kg	37.6	878	6/6	SP-07	N/A	-	N/A	878	790	1,600	N/A	N/A	Y	ASTV
	7439-97-6	Mercury	mg/kg	0.14	2	3/6	SP-07	0.17	-	0.34	2	0.26	7.8	N/A	N/A	N	BSTV
	7440-02-0	Nickel	mg/kg	5.8	28.1	6/6	SP-08	N/A	-	N/A	28.1	38	1,500	N/A	N/A	N	BSL
	7440-09-7	Potassium	mg/kg	231	1580	6/6	SP-08	N/A	-	N/A	1580	3500	N/A	N/A	N/A	N	ENUT
	7782-49-2	Selenium	mg/kg	0.46	3.9	5/6	SP-07	11.3	-	11.3	3.9	0.69	390	N/A	N/A	N	BSTV
	7440-22-4	Silver	mg/kg	0.45	8200	5/6	SP-04	942	-	942	8200	430	N/A	N/A	N/A	N	BSL
	7440-28-0	Thallium	mg/kg	0.75	2.7	5/6	SP-07	8.4	-	8.4	2.7	2.4	6.3	N/A	N/A	N	BSTV
	7440-62-2	Vanadium	mg/kg	6.2	24.9	6/6	SP-08	N/A	-	N/A	24.9	37	390	N/A	N/A	N	BSTV
	7440-66-6	Zinc	mg/kg	1450	95600	6/6	SP-04	N/A	-	N/A	95600	140	23,000	N/A	N/A	Y	ASTV

Notes:
[1] Maximum concentration was used as the screening concentration.
[2] Background values represent Upper Prediction Limits (UPLs) from Goose Lake data. When UPLs could not be calculated due to small sample size, maximum background values were used provided that the maximum concentration was not an outlier.
[3] Screening toxicity value represents the most conservative screening criteria from USEPA Regional Screening Levels, Soil Remediation Objectives from Tiered Approach to Corrective Action Objectives (TACO), or non-TACO or provisional soil remediation objectives.
[4] For original screening toxicity value prior to adjustment for Mixture Rule, refer to Appendix E tables.
[5] Rationale codes:
BSL = Excluded based on comparison to background value.
ASTV = Retained because screening concentration is above screening toxicity value.
BSTV = Excluded because screening concentration is below screening toxicity value.
ENUT = Essential nutrient.
[a] The screening toxicity value was adjusted for the TACO Mixture Rule. Target organ = Kidney; n = 3.
[b] The screening toxicity value was adjusted for the TACO Mixture Rule. Target organ = Gastrointestinal System; n = 3.
Table contains detected constituents only.
ARAR/TBC = Applicable or Relevant and Appropriate Requirement / To Be Considered
COPC = Chemical of Potential Concern
TAL = target analyte list
N/A = Not available
mg/kg = milligram per kilogram

Table 2.22
Occurrence, Distribution, and Selection of Chemicals of Potential Concern
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Seep Sediment
Exposure Area: Floodplain Area 1C
Receptor: Trespasser
Receptor Age: Adolescent

Exposure Point	CAS Number	Chemical of Potential Concern	Units	Minimum Detect	Maximum Detect	Detection Frequency	Max Detect Location	Minimum Non-Detect RANGE		Maximum Non-Detect RANGE	Concentration used for Screening [1]	Background Value [2]	Screening Toxicity Value [3,4]	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Final COPC Flag (Y/N)	Rationale for Selection or Deletion [5]
Seep Sediment		**TAL-Metals and Cyanide**															
	7429-90-5	Aluminum	mg/kg	2740	2740	1/1	SP-10	N/A	-	N/A	2740	21000	77,000	N/A	N/A	N	BSL
	7440-38-2	Arsenic	mg/kg	3.5	3.5	1/1	SP-10	N/A	-	N/A	3.5	7.3	0.39	N/A	N/A	N	BSL
	7440-39-3	Barium	mg/kg	167	167	1/1	SP-10	N/A	-	N/A	167	170	1,833 [a]	N/A	N/A	N	BSL
	7440-43-9	Cadmium	mg/kg	8.3	8.3	1/1	SP-10	N/A	-	N/A	8.3	2.7	70	N/A	N/A	N	BSTV
	7440-70-2	Calcium	mg/kg	92100	92100	1/1	SP-10	N/A	-	N/A	92100	43000	N/A	N/A	N/A	N	ENUT
	7440-47-3	Chromium	mg/kg	6.3	6.3	1/1	SP-10	N/A	-	N/A	6.3	46	230	N/A	N/A	N	BSL
	7440-48-4	Cobalt	mg/kg	3.8	3.8	1/1	SP-10	N/A	-	N/A	3.8	11	23	N/A	N/A	N	BSL
	7440-50-8	Copper	mg/kg	77.6	77.6	1/1	SP-10	N/A	-	N/A	77.6	47	1,450 [b]	N/A	N/A	N	BSTV
	7439-89-6	Iron	mg/kg	17700	17700	1/1	SP-10	N/A	-	N/A	17700	30000	27,500 [b]	N/A	N/A	N	BSL
	7439-92-1	Lead	mg/kg	36.5	36.5	1/1	SP-10	N/A	-	N/A	36.5	44	400	N/A	N/A	N	BSL
	7439-95-4	Magnesium	mg/kg	8140	8140	1/1	SP-10	N/A	-	N/A	8140	12000	N/A	N/A	N/A	N	ENUT
	7439-96-5	Manganese	mg/kg	137	137	1/1	SP-10	N/A	-	N/A	137	790	1,600	N/A	N/A	N	BSL
	7440-02-0	Nickel	mg/kg	9.5	9.5	1/1	SP-10	N/A	-	N/A	9.5	38	1,500	N/A	N/A	N	BSL
	7440-09-7	Potassium	mg/kg	429	429	1/1	SP-10	N/A	-	N/A	429	3500	N/A	N/A	N/A	N	ENUT
	7440-62-2	Vanadium	mg/kg	9.9	9.9	1/1	SP-10	N/A	-	N/A	9.9	37	390	N/A	N/A	N	BSTV
	7440-66-6	Zinc	mg/kg	1320	1320	1/1	SP-10	N/A	-	N/A	1320	240	23000	N/A	N/A	N	BSTV

Notes:
[1] Maximum concentration was used as the screening concentration.
[2] Background values represent Upper Prediction Limits (UPLs) from Goose Lake data. When UPLs could not be calculated due to small sample size, maximum background values were used provided that the maximum concentration was not an outlier.
[3] Screening toxicity value represents the most conservative screening criteria from USEPA Regional Screening Levels, Soil Remediation Objectives from Tiered Approach to Corrective Action Objectives (TACO), or non-TACO or provisional soil remediation objectives.
[4] For original screening toxicity value prior to adjustment for Mixture Rule, refer to Appendix E tables.
[5] Rationale codes:
BSL = Excluded based on comparison to background value.
BSTV = Excluded because screening concentration is below screening toxicity value.
ENUT = Essential nutrient.
[a] The screening toxicity value was adjusted for the TACO Mixture Rule. Target organ = Kidney; n = 3.
[b] The screening toxicity value was adjusted for the TACO Mixture Rule. Target organ = Gastrointestinal System; n = 2.
Table contains detected constituents only.
ARAR/TBC = Applicable or Relevant and Appropriate Requirement / To Be Considered
COPC = Chemical of Potential Concern
TAL = target analyte list
N/A = Not available
mg/kg = milligram per kilogram

Table 2.23
Occurrence, Distribution, and Selection of Chemicals of Potential Concern
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Surface Water
Exposure Area: Lake-wide
Boater, Boat
Receptor Age: Adult and Child (workers and hunters = adult only)

Exposure Point	CAS Number	Chemical of Potential Concern	Units	Minimum Detect	Maximum Detect	Detection Frequency	Max Detect	Minimum Non-Detect RANGE		Maximum Non-Detect RANGE	Concentration used for Screening [1]	Background Value [2]	Screening Toxicity Value [3,4]	Potential ARAR/TBC Value	Final COPC Flag (Y/N)	Rationale for Selection or Deletion [5]
Surface Water		**TAL-Metals and Cyanide**														
	7429-90-5	Aluminum	mg/L	0.0894	2.04	18/18	SW-09-LO	N/A	-	N/A	2.04	4.8	3.5	N/A	N	BSL
	7440-39-3	Barium	mg/L	0.0369	0.102	18/18	SW-09-LO	N/A	-	N/A	0.102	0.092	2	N/A	N	BSTV
	7440-41-7	Beryllium	mg/L	0.00022	0.00059	14/18	SW-08-HI	0.0002	-	0.0004	0.00059	0.00058	0.004	N/A	N	BSTV
	7440-43-9	Cadmium	mg/L	0.00066	0.0072	9/18	SW-10-HI	0.0005	-	0.005	0.0072	N/A	0.005	N/A	Y	ASTV
	7440-70-2	Calcium	mg/L	63.3	194	18/18	SW-10-LO	N/A	-	N/A	194	70	N/A	N/A	N	ENUT
	7440-47-3	Chromium	mg/L	0.00092	0.0043	11/18	SW-06-LO,SW-08-HI	0.0005	-	0.01	0.0043	0.011	0.1	N/A	N	BSL
	7440-48-4	Cobalt	mg/L	0.00098	0.0108	15/18	SW-10-LO	0.0016	-	0.0016	0.0108	0.0031	1	N/A	N	BSTV
	7440-50-8	Copper	mg/L	0.0029	0.0566	18/18	SW-10-LO	N/A	-	N/A	0.0566	0.0099	0.65	N/A	N	BSTV
	57-12-5	Cyanide	mg/L	0.0043	0.0827	16/18	SW-03-LO	0.0114	-	0.0171	0.0827	0.036	0.2	N/A	N	BSTV
	7439-89-6	Iron	mg/L	0.137	3.21	18/18	SW-09-LO	N/A	-	N/A	3.21	6.9	5	N/A	N	BSL
	7439-92-1	Lead	mg/L	0.0057	0.0724	17/18	SW-09-LO	0.0021	-	0.0021	0.0724	0.013	0.0075	N/A	Y	ASTV
	7439-95-4	Magnesium	mg/L	24	100	18/18	SW-10-LO	N/A	-	N/A	100	32	N/A	N/A	N	ENUT
	7439-96-5	Manganese	mg/L	0.0924	1.44	18/18	SW-10-LO	N/A	-	N/A	1.44	0.23	0.15	N/A	Y	ASTV
	7439-97-6	Mercury	mg/L	0.00018	0.00018	1/18	SW-09-LO	0.0001	-	0.0001	0.00018	N/A	0.002	N/A	N	BSTV
	7440-02-0	Nickel	mg/L	0.0039	0.0083	17/18	SW-06-LO	0.0011	-	0.0011	0.0083	0.011	0.1	N/A	N	BSTV
	7440-09-7	Potassium	mg/L	5.15	13.3	18/18	SW-08-LO	N/A	-	N/A	13.3	5.2	N/A	N/A	N	ENUT
	7440-23-5	Sodium	mg/L	43.7	195	18/18	SW-08-LO	N/A	-	N/A	195	58	N/A	N/A	N	ENUT
	7440-62-2	Vanadium	mg/L	0.00056	0.007	18/18	SW-04-LO,SW-09-LO	N/A	-	N/A	0.007	0.014	0.049	N/A	N	BSL
	7440-66-6	Zinc	mg/L	0.032	1.79	18/18	SW-10-LO	N/A	-	N/A	1.79	0.064	5	N/A	N	BSTV
		Metals-Filtered														
	7429-90-5	Aluminum	mg/L	0.0149	0.163	7/18	SW-03-LO	0.0092	-	0.2	0.163	0.04	3.5	N/A	N	BSTV
	7440-36-0	Antimony	mg/L	0.0036	0.0036	1/18	SW-01-HI	0.0015	-	0.0029	0.0036	N/A	0.006	N/A	N	BSTV
	7440-38-2	Arsenic	mg/L	0.0047	0.0088	10/17	SW-10-HI	0.01	-	0.01	0.0088	0.0073	0.01	N/A	N	BSTV
	7440-39-3	Barium	mg/L	0.0208	0.0612	18/18	SW-07-LO	N/A	-	N/A	0.0612	0.054	2	N/A	N	BSTV
	7440-41-7	Beryllium	mg/L	0.0002	0.00023	4/18	SW-10-LO	0.0002	-	0.0002	0.00023	0.00022	0.004	N/A	N	BSTV
	7440-70-2	Calcium	mg/L	63.2	200	18/18	SW-10-LO	N/A	-	N/A	200	71	N/A	N/A	N	ENUT
	7440-48-4	Cobalt	mg/L	0.0085	0.0085	1/18	SW-10-LO	0.0005	-	0.0016	0.0085	N/A	1	N/A	N	BSTV
	7440-50-8	Copper	mg/L	0.00096	0.0064	13/18	SW-10-HI	0.0009	-	0.0009	0.0064	0.0018	0.65	N/A	N	BSTV
	7439-92-1	Lead	mg/L	0.0027	0.0027	1/18	SW-09-LO	0.0014	-	0.0021	0.0027	N/A	0.0075	N/A	N	BSTV
	7439-95-4	Magnesium	mg/L	26.5	103	18/18	SW-10-LO	N/A	-	N/A	103	31	N/A	N/A	N	ENUT
	7439-96-5	Manganese	mg/L	0.011	1.4	18/18	SW-10-LO	N/A	-	N/A	1.4	0.011	0.15	N/A	Y	ASTV
	7440-02-0	Nickel	mg/L	0.003	0.008	18/18	SW-10-LO	N/A	-	N/A	0.008	0.0051	0.1	N/A	N	BSTV
	7440-09-7	Potassium	mg/L	6.14	14.9	18/18	SW-08-LO	N/A	-	N/A	14.9	6.1	N/A	N/A	N	ENUT
	7782-49-2	Selenium	mg/L	0.0026	0.009	12/18	SW-10-LO	0.0033	-	0.0033	0.009	0.0034	0.05	N/A	N	BSTV
	7440-23-5	Sodium	mg/L	48.5	199	18/18	SW-08-LO	N/A	-	N/A	199	63	N/A	N/A	N	ENUT
	7440-62-2	Vanadium	mg/L	0.00053	0.0036	16/18	SW-01-HI,SW-06-HI	0.0004	-	0.02	0.0036	0.0053	0.049	N/A	N	BSL
	7440-66-6	Zinc	mg/L	0.0011	0.868	17/18	SW-10-LO	0.002	-	0.002	0.868	N/A	5	N/A	N	BSTV
		Miscellaneous														
	7664-41-7	Ammonia	mg/L	0.0624	36.2	18/18	SW-10-LO	N/A	-	N/A	36.2	0.079	N/A	N/A	Y	ABSL
	16887-00-6	Chloride	mg/L	35.3	341	18/18	SW-08-LO	N/A	-	N/A	341	100	200	N/A	Y	ASTV
	16984-48-8	Fluoride	mg/L	0.26	0.875	18/18	SW-08-LO	N/A	-	N/A	0.875	0.5	4	N/A	N	BSTV
	14797-55-8	Nitrate as N	mg/L	0.195	17	14/18	SW-08-LO	0.05	-	0.05	17	1.5	10	N/A	Y	ASTV
	98059-61-1	Phosphate	mg/L	0.215	1.66	6/18	SW-10-LO	0.05	-	0.05	1.66	N/A	N/A	N/A	N	NSTV [a]
	7723-14-0	Phosphorus, Total	mg/L	0.569	3.48	6/18	SW-10-LO	0.323	-	0.463	3.48	0.63	N/A	N/A	Y	ABSL
	14808-79-8	Sulfate	mg/L	53.5	800	18/18	SW-10-LO	N/A	-	N/A	800	78	400	N/A	Y	ASTV
	7704-34-9	Sulfide	mg/L	0.6	0.6	2/18	SW-03-HI,SW-05-HI	1	-	1	0.6	N/A	N/A	N/A	N	NSTV

Table 2.23
Occurrence, Distribution, and Selection of Chemicals of Potential Concern
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Surface Water
Exposure Area: Lake-wide
Boater, Boat
Receptor Age: Adult and Child (workers and hunters = adult only)

Notes:
[1] Maximum concentration was used as the screening concentration.
[2] Background values represent Upper Prediction Limits (UPLs) from Goose Lake data. When UPLs could not be calculated due to small sample size, maximum background values were used provided that the maximum concentration was not an outlier.
[3] Screening toxicity value represents the most conservative screening criteria from USEPA Maximum Contaminant Levels, IEPA Derived Water Quality Criteria, Tiered Approach to Corrective Action Objectives (TACO) Groundwater Remediation Objectives (Class I), and non-TACO or provisional remediation objectives.
[4] For original screening toxicity value prior to adjustment for Mixture Rule, refer to Appendix E tables.
[5] Rationale codes:
BSL = Excluded based on comparison to background value.
ABSL = Retained because screening concentration is above background and no screening toxicity value is available.
ASTV = Retained because screening concentration is above screening toxicity value.
BSTV = Excluded because screening concentration is below screening toxicity value.
NSTV = No screening toxicity value. Constituent has no associated toxicity value that would allow quantitative evaluation; therefore, this constituent is not retained as a COPC.
ENUT = Essential nutrient.
[a] Constituent has no associated toxicity value for quantitative evaluation; therefore this constituent is not retained as a COPC.
Table contains detected constituents only.
ARAR/TBC = Applicable or Relevant and Appropriate Requirement / To Be Considered
COPC = Chemical of Potential Concern
TAL = target analyte list
N/A = Not available
mg/L = milligram per liter

Table 2.23A
Occurrence, Distribution, and Selection of Chemicals of Potential Concern
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Surface Water
Exposure Area: Eastern Lake
Receptor: Village Park Recreational User, Shoreline Angler, Village Park Maintenance Worker, and Utility Maintenance Worker
Receptor Age: Adult and Child (workers = adult only)

Exposure Point	CAS Number	Chemical of Potential Concern	Units	Minimum Detect	Maximum Detect	Detection Frequency	Max Detect	Minimum Non-Detect RANGE		Maximum Non-Detect	Concentration used for Screening [1]	Background Value [2]	Screening Toxicity Value [3,4]	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Final COPC Flag (Y/N)	Rationale for Selection or Deletion [5]
Surface Water		**TAL-Metals and Cyanide**															
	7429-90-5	Aluminum	mg/L	0.0894	2.04	10/10	SW-09-LO	N/A	-	N/A	2.04	4.8	3.5	N/A	N/A	N	BSL
	7440-39-3	Barium	mg/L	0.0526	0.102	10/10	SW-09-LO	N/A	-	N/A	0.102	0.092	2	N/A	N/A	N	BSTV
	7440-41-7	Beryllium	mg/L	0.00022	0.00059	7/10	SW-08-HI	0.0002	-	0.0004	0.00059	0.00058	0.004	N/A	N/A	N	BSTV
	7440-43-9	Cadmium	mg/L	0.00066	0.0056	6/10	SW-09-LO	0.0005	-	0.005	0.0056	N/A	0.005	N/A	N/A	Y	ASTV
	7440-70-2	Calcium	mg/L	63.3	106	10/10	SW-08-LO	N/A	-	N/A	106	70	N/A	N/A	N/A	N	ENUT
	7440-47-3	Chromium	mg/L	0.0023	0.0043	6/10	SW-08-HI	0.0005	-	0.01	0.0043	0.011	0.1	N/A	N/A	N	BSL
	7440-48-4	Cobalt	mg/L	0.0011	0.003	7/10	SW-08-HI	0.0016	-	0.0016	0.003	0.0031	1	N/A	N/A	N	BSL
	7440-50-8	Copper	mg/L	0.0029	0.036	10/10	SW-09-LO	N/A	-	N/A	0.036	0.0099	0.65	N/A	N/A	N	BSTV
	57-12-5	Cyanide	mg/L	0.007	0.082	9/10	SW-04-LO	0.0171	-	0.0171	0.082	0.036	0.2	N/A	N/A	N	BSTV
	7439-89-6	Iron	mg/L	0.137	3.21	10/10	SW-09-LO	N/A	-	N/A	3.21	6.9	5	N/A	N/A	N	BSL
	7439-92-1	Lead	mg/L	0.0067	0.0724	9/10	SW-09-LO	0.0021	-	0.0021	0.0724	0.013	0.0075	N/A	N/A	Y	ASTV
	7439-95-4	Magnesium	mg/L	25	43.6	10/10	SW-04-LO	N/A	-	N/A	43.6	32	N/A	N/A	N/A	N	ENUT
	7439-96-5	Manganese	mg/L	0.0924	0.475	10/10	SW-04-LO	N/A	-	N/A	0.475	0.23	0.15	N/A	N/A	Y	ASTV
	7439-97-6	Mercury	mg/L	0.00018	0.00018	1/10	SW-09-LO	0.0001	-	0.0001	0.00018	N/A	0.002	N/A	N/A	N	BSTV
	7440-02-0	Nickel	mg/L	0.0041	0.0076	9/10	SW-09-LO	0.0011	-	0.0011	0.0076	0.011	0.1	N/A	N/A	N	BSL
	7440-09-7	Potassium	mg/L	5.15	13.3	10/10	SW-08-LO	N/A	-	N/A	13.3	5.2	N/A	N/A	N/A	N	ENUT
	7440-23-5	Sodium	mg/L	50.4	195	10/10	SW-08-LO	N/A	-	N/A	195	58	N/A	N/A	N/A	N	ENUT
	7440-62-2	Vanadium	mg/L	0.00056	0.007	10/10	SW-04-LO,SW-09-LO	N/A	-	N/A	0.007	0.014	0.049	N/A	N/A	N	BSL
	7440-66-6	Zinc	mg/L	0.032	0.583	10/10	SW-09-LO	N/A	-	N/A	0.583	0.064	5	N/A	N/A	N	BSTV
		Metals-Filtered															
	7429-90-5	Aluminum	mg/L	0.0149	0.151	4/10	SW-07-LO	0.0092	-	0.2	0.151	0.04	3.5	N/A	N/A	N	BSTV
	7440-38-2	Arsenic	mg/L	0.0047	0.0069	5/10	SW-07-HI	0.01	-	0.01	0.0069	0.0073	0.01	N/A	N/A	N	BSL
	7440-39-3	Barium	mg/L	0.0434	0.0612	10/10	SW-07-LO	N/A	-	N/A	0.0612	0.054	2	N/A	N/A	N	BSTV
	7440-41-7	Beryllium	mg/L	0.00021	0.00021	1/10	SW-07-LO	0.0002	-	0.0002	0.00021	0.00022	0.004	N/A	N/A	N	BSL
	7440-70-2	Calcium	mg/L	64.5	106	10/10	SW-08-LO	N/A	-	N/A	106	71	N/A	N/A	N/A	N	ENUT
	7440-50-8	Copper	mg/L	0.00096	0.003	6/10	SW-09-HI	0.0009	-	0.0009	0.003	0.0018	0.65	N/A	N/A	N	BSTV
	7439-92-1	Lead	mg/L	0.0027	0.0027	1/10	SW-09-LO	0.0014	-	0.0021	0.0027	N/A	0.0075	N/A	N/A	N	BSTV
	7439-95-4	Magnesium	mg/L	29.2	42.6	10/10	SW-07-LO,SW-09-LO	N/A	-	N/A	42.6	31	N/A	N/A	N/A	N	ENUT
	7439-96-5	Manganese	mg/L	0.011	0.103	10/10	SW-07-HI	N/A	-	N/A	0.103	0.011	0.15	N/A	N/A	N	BSTV
	7440-02-0	Nickel	mg/L	0.003	0.0057	10/10	SW-05-LO	N/A	-	N/A	0.0057	0.0051	0.1	N/A	N/A	N	BSTV
	7440-09-7	Potassium	mg/L	6.21	14.9	10/10	SW-08-LO	N/A	-	N/A	14.9	6.1	N/A	N/A	N/A	N	ENUT
	7782-49-2	Selenium	mg/L	0.0026	0.0038	6/10	SW-07-HI	0.0033	-	0.0033	0.0038	0.0034	0.05	N/A	N/A	N	BSTV
	7440-23-5	Sodium	mg/L	58	199	10/10	SW-08-LO	N/A	-	N/A	199	63	N/A	N/A	N/A	N	ENUT
	7440-62-2	Vanadium	mg/L	0.0019	0.0034	9/10	SW-04-HI	0.0004	-	0.0004	0.0034	0.0053	0.049	N/A	N/A	N	BSL
	7440-66-6	Zinc	mg/L	0.0011	0.0198	9/10	SW-08-LO	0.002	-	0.002	0.0198	N/A	5	N/A	N/A	N	BSTV
		Miscellaneous															
	7664-41-7	Ammonia	mg/L	0.177	0.905	10/10	SW-05-LO	N/A	-	N/A	0.905	0.079	N/A	N/A	N/A	Y	ABSL
	16887-00-6	Chloride	mg/L	67.3	341	10/10	SW-08-LO	N/A	-	N/A	341	100	200	N/A	N/A	Y	ASTV
	16984-48-8	Fluoride	mg/L	0.29	0.875	10/10	SW-08-LO	N/A	-	N/A	0.875	0.5	4	N/A	N/A	N	BSTV
	14797-55-8	Nitrate as N	mg/L	0.21	17	7/10	SW-08-LO	0.05	-	0.05	17	1.5	10	N/A	N/A	Y	ASTV
	98059-61-1	Phosphate	mg/L	1.41	1.41	1/10	SW-08-LO	0.05	-	0.05	1.41	N/A	N/A	N/A	N/A	N	NSTV [a]
	7723-14-0	Phosphorus, Total	mg/L	0.569	2.67	2/10	SW-08-LO	0.323	-	0.463	2.67	0.63	N/A	N/A	N/A	Y	ABSL
	14808-79-8	Sulfate	mg/L	83.4	141	10/10	SW-05-LO	N/A	-	N/A	141	78	400	N/A	N/A	N	BSTV
	7704-34-9	Sulfide	mg/L	0.6	0.6	1/10	SW-05-HI	1	-	1	0.6	N/A	N/A	N/A	N/A	N	NSTV [a]

Table 2.23A
Occurrence, Distribution, and Selection of Chemicals of Potential Concern
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Surface Water
Exposure Area: Eastern Lake
Receptor: Village Park Recreational User, Shoreline Angler, Village Park Maintenance Worker, and Utility Maintenance Worker
Receptor Age: Adult and Child (workers = adult only)

Notes:
[1] Maximum concentration was used as the screening concentration.
[2] Background values represent Upper Prediction Limits (UPLs) from Goose Lake data. When UPLs could not be calculated due to small sample size, maximum background values were used provided that the maximum concentration was not an outlier.
[3] Screening toxicity value represents the most conservative screening criteria from USEPA Maximum Contaminant Levels, IEPA Derived Water Quality Criteria, Tiered Approach to Corrective Action Objectives (TACO) Groundwater Remediation Objectives (Class I), and non-TACO or provisional remediation objectives.
[4] For original screening toxicity value prior to adjustment for Mixture Rule, refer to Appendix E tables.
[5] Rationale codes:
BSL = Excluded based on comparison to background value.
ABSL = Retained because screening concentration is above background and no screening toxicity value is available.
ASTV = Retained because screening concentration is above screening toxicity value.
BSTV = Excluded because screening concentration is below screening toxicity value.
NSTV = No screening toxicity value. Constituent has no associated toxicity value that would allow quantitative evaluation; therefore, this constituent is not retained as a COPC.
ENUT = Essential nutrient.
[a] Constituent has no associated toxicity value for quantitative evaluation; therefore this constituent is not retained as a COPC.
Table contains detected constituents only.
ARAR/TBC = Applicable or Relevant and Appropriate Requirement / To Be Considered
COPC = Chemical of Potential Concern
TAL = target analyte list
N/A = Not available
mg/L = milligram per liter

Table 2.24
Occurrence, Distribution, and Selection of Chemicals of Potential Concern
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Seep Surface Water
Exposure Area: Floodplain Area 1A
Receptor: Village Park Recreational User, Boater, Boat Angler, Shoreline Angler, and Village Park Maintenance Worker
Receptor Age: Adult and Child (maintenance worker = adult only)

Exposure Point	CAS Number	Chemical of Potential Concern	Units	Minimum Detect	Maximum Detect	Detection Frequency	Max Detect Location	Minimum Non-Detect RANGE		Maximum Non-Detect RANGE	Concentration used for Screening [1]	Background Value [2]	Screening Toxicity Value [3,4]	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Final COPC Flag (Y/N)	Rationale for Selection or Deletion [5]
Seep Surface Water		**TAL-Metals and Cyanide**															
	7429-90-5	Aluminum	mg/L	0.015	0.0849	2/3	SP-03	0.0147	-	0.0147	0.0849	4.8	3.5	N/A	N/A	N	BSL
	7440-39-3	Barium	mg/L	0.0823	0.127	3/3	SP-01	N/A	-	N/A	0.127	0.092	2	N/A	N/A	N	BSTV
	7440-41-7	Beryllium	mg/L	0.00021	0.00021	1/3	SP-02	0.0002	-	0.0002	0.00021	0.00058	0.004	N/A	N/A	N	BSL
	7440-70-2	Calcium	mg/L	120	168	3/3	SP-02	N/A	-	N/A	168	70	N/A	N/A	N/A	N	ENUT
	7440-50-8	Copper	mg/L	0.0016	0.0016	1/3	SP-01	0.0009	-	0.0009	0.0016	0.0099	0.65	N/A	N/A	N	BSL
	7439-89-6	Iron	mg/L	1.11	5.63	2/3	SP-03	0.0098	-	0.0098	5.63	6.9	5	N/A	N/A	N	BSL
	7439-95-4	Magnesium	mg/L	41.5	56.7	3/3	SP-02	N/A	-	N/A	56.7	32	N/A	N/A	N/A	N	ENUT
	7439-96-5	Manganese	mg/L	0.0016	0.401	3/3	SP-01	N/A	-	N/A	0.401	0.23	0.15	N/A	N/A	Y	ASTV
	7440-09-7	Potassium	mg/L	0.994	2.29	3/3	SP-03	N/A	-	N/A	2.29	5.2	N/A	N/A	N/A	N	ENUT
	7440-23-5	Sodium	mg/L	36.2	69.5	3/3	SP-01	N/A	-	N/A	69.5	58	N/A	N/A	N/A	N	ENUT
	7440-62-2	Vanadium	mg/L	0.00046	0.00046	1/3	SP-03	0.0004	-	0.0004	0.00046	0.014	0.049	N/A	N/A	N	BSL
	7440-66-6	Zinc	mg/L	0.0495	0.421	2/3	SP-03	0.02	-	0.02	0.421	0.064	5	N/A	N/A	N	BSTV
		Metals-Filtered															
	7429-90-5	Aluminum	mg/L	0.0218	0.0218	1/3	SP-01	0.0147	-	0.0147	0.0218	0.04	3.5	N/A	N/A	N	BSL
	7440-39-3	Barium	mg/L	0.0776	0.127	3/3	SP-01	N/A	-	N/A	0.127	0.054	2	N/A	N/A	N	BSTV
	7440-41-7	Beryllium	mg/L	0.00023	0.00023	1/3	SP-01	0.0002	-	0.0002	0.00023	0.00022	0.004	N/A	N/A	N	BSTV
	7440-70-2	Calcium	mg/L	124	168	3/3	SP-02	N/A	-	N/A	168	71	N/A	N/A	N/A	N	ENUT
	7439-89-6	Iron	mg/L	0.75	3.24	2/3	SP-03	0.0098	-	0.0098	3.24	N/A	5	N/A	N/A	N	BSTV
	7439-95-4	Magnesium	mg/L	43.1	56.1	3/3	SP-02	N/A	-	N/A	56.1	34	N/A	N/A	N/A	N	ENUT
	7439-96-5	Manganese	mg/L	0.247	0.402	2/3	SP-01	0.0001	-	0.0001	0.402	0.011	0.15	N/A	N/A	Y	ASTV
	7440-02-0	Nickel	mg/L	0.0012	0.0013	2/3	SP-01	0.0011	-	0.0011	0.0013	0.0051	0.1	N/A	N/A	N	BSL
	7440-09-7	Potassium	mg/L	1.19	2.67	3/3	SP-03	N/A	-	N/A	2.67	6.1	N/A	N/A	N/A	N	ENUT
	7782-49-2	Selenium	mg/L	0.0033	0.0106	3/3	SP-02	N/A	-	N/A	0.0106	0.0034	0.05	N/A	N/A	N	BSTV
	7440-23-5	Sodium	mg/L	35.7	73.4	3/3	SP-01	N/A	-	N/A	73.4	63	N/A	N/A	N/A	N	ENUT
	7440-66-6	Zinc	mg/L	0.0073	0.217	3/3	SP-03	N/A	-	N/A	0.217	N/A	5	N/A	N/A	N	BSTV
		Miscellaneous															
	7664-41-7	Ammonia	mg/L	0.311	0.51	2/3	SP3-SW1	0.1	-	0.1	0.51	0.079	N/A	N/A	N/A	Y	ABSL
	16887-00-6	Chloride	mg/L	54.1	111	3/3	SP1-SW1	N/A	-	N/A	111	100	200	N/A	N/A	N	BSTV
	14808-79-8	Sulfate	mg/L	77.8	141	3/3	SP-02	N/A	-	N/A	141	78	400	N/A	N/A	N	BSTV

Notes:
[1] Maximum concentration was used as the screening concentration.
[2] Background values represent Upper Prediction Limits (UPLs) from Goose Lake data. When UPLs could not be calculated due to small sample size, maximum background values were used provided that the maximum concentration was not an outlier.
[3] Screening toxicity value represents the most conservative screening criteria from USEPA Maximum Contaminant Levels, IEPA Derived Water Quality Criteria, Tiered Approach to Corrective Action Objectives (TACO) Groundwater Remediation Objectives (Class I), and non-TACO or provisional remediation objectives.
[4] For original screening toxicity value prior to adjustment for Mixture Rule, refer to Appendix E tables.
[5] Rationale codes:
BSL = Excluded based on comparison to background value.
ABSL = Retained because screening concentration is above background and no screening toxicity value is available.
ASTV = Retained because screening concentration is above screening toxicity value.
BSTV = Excluded because screening concentration is below screening toxicity value.
ENUT = Essential nutrient.
Table contains detected constituents only.
ARAR/TBC = Applicable or Relevant and Appropriate Requirement / To Be Considered
COPC = Chemical of Potential Concern
IEPA = Illinois Environmental Protection Agency
TAL = target analyte list
N/A = Not available
mg/L = milligram per liter

Table 2.25
Occurrence, Distribution, and Selection of Chemicals of Potential Concern
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Seep Surface Water
Exposure Area: Floodplain Area 1B
Receptor: Trespasser and Utility Maintenance Worker
Receptor Age: Adolescent (trespasser), Adult (worker)

Exposure Point	CAS Number	Chemical of Potential Concern	Units	Minimum Detect	Maximum Detect	Detection Frequency	Max Detect Location	Minimum Non-Detect RANGE		Maximum Non-Detect RANGE	Concentration used for Screening [1]	Background Value [2]	Screening Toxicity Value [3,4]	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Final COPC Flag (Y/N)	Rationale for Selection or Deletion [5]
Seep Surface Water		**TAL-Metals and Cyanide**															
	7429-90-5	Aluminum	mg/L	0.149	1.37	5/6	SP-08	0.0147	-	0.0147	1.37	4.8	3.5	N/A	N/A	N	BSL
	7440-38-2	Arsenic	mg/L	0.0061	0.0061	1/6	SP-07	0.0032	-	0.0032	0.0061	N/A	0.01	N/A	N/A	N	BSTV
	7440-39-3	Barium	mg/L	0.0406	0.156	6/6	SP-05	N/A	-	N/A	0.156	0.092	2	N/A	N/A	N	BSTV
	7440-41-7	Beryllium	mg/L	0.00021	0.00024	2/6	SP-08	0.0002	-	0.0002	0.00024	0.00058	0.004	N/A	N/A	N	BSL
	7440-43-9	Cadmium	mg/L	0.00064	0.011	5/6	SP-07	0.0005	-	0.0005	0.011	N/A	0.005	N/A	N/A	Y	ASTV
	7440-70-2	Calcium	mg/L	133	157	6/6	SP-07	N/A	-	N/A	157	70	N/A	N/A	N/A	N	ENUT
	7440-47-3	Chromium	mg/L	0.0019	0.0025	2/6	SP-08	0.0005	-	0.0005	0.0025	0.011	0.1	N/A	N/A	N	BSL
	7440-48-4	Cobalt	mg/L	0.0018	0.0025	3/6	SP-08	0.0016	-	0.0016	0.0025	0.0031	1	N/A	N/A	N	BSL
	7440-50-8	Copper	mg/L	0.0011	0.0452	5/6	SP-08	0.0009	-	0.0009	0.0452	0.0099	0.65	N/A	N/A	N	BSTV
	57-12-5	Cyanide	mg/L	0.0405	0.106	2/6	SP-08	0.01	-	0.0162	0.106	0.036	0.2	N/A	N/A	N	BSTV
	7439-89-6	Iron	mg/L	0.373	4.45	5/6	SP-07	0.0098	-	0.0098	4.45	6.9	5	N/A	N/A	N	BSL
	7439-92-1	Lead	mg/L	0.0029	0.0258	5/6	SP-08	0.0021	-	0.0021	0.0258	0.013	0.0075	N/A	N/A	Y	ASTV
	7439-95-4	Magnesium	mg/L	46.3	51.7	6/6	SP-06	N/A	-	N/A	51.7	32	N/A	N/A	N/A	N	ENUT
	7439-96-5	Manganese	mg/L	0.0396	0.402	5/6	SP-07	0.0001	-	0.0001	0.402	0.23	0.15	N/A	N/A	Y	ASTV
	7440-02-0	Nickel	mg/L	0.0022	0.0024	2/6	SP-08	0.0011	-	0.0011	0.0024	0.011	0.1	N/A	N/A	N	BSL
	7440-09-7	Potassium	mg/L	2.26	3.95	6/6	SP-08	N/A	-	N/A	3.95	5.2	N/A	N/A	N/A	N	ENUT
	7440-23-5	Sodium	mg/L	33.2	49.2	6/6	SP-08	N/A	-	N/A	49.2	58	N/A	N/A	N/A	N	ENUT
	7440-62-2	Vanadium	mg/L	0.00047	0.0025	6/6	SP-05	N/A	-	N/A	0.0025	0.014	0.049	N/A	N/A	N	BSL
	7440-66-6	Zinc	mg/L	0.0577	1.05	5/6	SP-07	0.022	-	0.022	1.05	0.064	5	N/A	N/A	N	BSTV
		Metals-Filtered															
	7429-90-5	Aluminum	mg/L	0.0166	0.0166	1/6	SP-04	0.0147	-	0.0147							
	7440-39-3	Barium	mg/L	0.0393	0.138	6/6	SP-05	N/A	-	N/A	0.138	0.054	2	N/A	N/A	N	BSTV
	7440-41-7	Beryllium	mg/L	0.00021	0.00023	2/6	SP-04	0.0002	-	0.0002	0.00023	0.00022	0.004	N/A	N/A	N	BSTV
	7440-70-2	Calcium	mg/L	132	159	6/6	SP-07	N/A	-	N/A	159	71	N/A	N/A	N/A	N	ENUT
	7439-89-6	Iron	mg/L	0.477	3.44	3/6	SP-06	0.0098	-	0.0098	3.44	N/A	5	N/A	N/A	N	BSTV
	7439-95-4	Magnesium	mg/L	46.8	52.5	6/6	SP-06	N/A	-	N/A	52.5	34	N/A	N/A	N/A	N	ENUT
	7439-96-5	Manganese	mg/L	0.0018	0.378	5/6	SP-07	0.0001	-	0.0001	0.378	0.011	0.15	N/A	N/A	Y	ASTV
	7440-02-0	Nickel	mg/L	0.0013	0.0013	2/6	SP-04, SP-09	0.0011	-	0.0011	0.0013	0.0051	0.1	N/A	N/A	N	BSL
	7440-09-7	Potassium	mg/L	2.57	4.1	6/6	SP-08	N/A	-	N/A	4.1	6.1	N/A	N/A	N/A	N	ENUT
	7782-49-2	Selenium	mg/L	0.0036	0.0049	5/6	SP-04	0.0033	-	0.0033	0.0049	0.0034	0.05	N/A	N/A	N	BSTV
	7440-23-5	Sodium	mg/L	33.7	50.3	6/6	SP-09	N/A	-	N/A	50.3	63	N/A	N/A	N/A	N	ENUT
	7440-62-2	Vanadium	mg/L	0.00041	0.00041	1/6	SP-09	0.0004	-	0.0004	0.00041	0.0053	0.049	N/A	N/A	N	BSL
	7440-66-6	Zinc	mg/L	0.0078	0.0547	5/6	SP-09	0.0007	-	0.0007	0.0547	N/A	5	N/A	N/A	N	BSTV
		Miscellaneous															
	7664-41-7	Ammonia	mg/L	0.0805	0.678	3/6	SP-06	0.1	-	0.1	0.678	0.079	N/A	N/A	N/A	Y	ABSL
	16887-00-6	Chloride	mg/L	52.1	99.1	6/6	SP-08	N/A	-	N/A	99.1	100	200	N/A	N/A	N	BSL
	16984-48-8	Fluoride	mg/L	1.26	1.26	1/6	SP-07	0.2	-	0.2	1.26	0.5	4	N/A	N/A	N	BSTV
	14797-55-8	Nitrate as N	mg/L	0.745	0.745	1/6	SP-09	0.05	-	0.05	0.745	1.5	10	N/A	N/A	N	BSL
	98059-61-1	Phosphate	mg/L	1.75	1.93	2/6	SP-07	0.05	-	0.05	1.93	N/A	N/A	N/A	N/A	N	NSTV [a]
	7723-14-0	Phosphorus, Total	mg/L	3.73	3.73	1/6	SP-07	0.25	-	0.297	3.73	0.63	N/A	N/A	N/A	Y	ABSL
	14808-79-8	Sulfate	mg/L	112	229	6/6	SP-06	N/A	-	N/A	229	78	400	N/A	N/A	N	BSTV

Table 2.25
Occurrence, Distribution, and Selection of Chemicals of Potential Concern
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Seep Surface Water
Exposure Area: Floodplain Area 1B
Receptor: Trespasser and Utility Maintenance Worker
Receptor Age: Adolescent (trespasser), Adult (worker)

Notes:
[1] Maximum concentration was used as the screening concentration.
[2] Background values represent Upper Prediction Limits (UPLs) from Goose Lake data. When UPLs could not be calculated due to small sample size, maximum background values were used provided that the maximum concentration was not an outlier.
[3] Screening toxicity value represents the most conservative screening criteria from USEPA Maximum Contaminant Levels, IEPA Derived Water Quality Criteria, Tiered Approach to Corrective Action Objectives (TACO) Groundwater Remediation Objectives (Class I), and non-TACO or provisional remediation objectives.
[4] For original screening toxicity value prior to adjustment for Mixture Rule, refer to Appendix E tables.
[5] Rationale codes:
BSL = Excluded based on comparison to background value.
ABSL = Retained because screening concentration is above background and no screening toxicity value is available.
ASTV = Retained because screening concentration is above screening toxicity value.
BSTV = Excluded because screening concentration is below screening toxicity value.
NSTV = No screening toxicity value. Constituent is not considered to be site-related and has no associated toxicity value that would allow quantitative evaluation; therefore, this constituent is not retained as a COPC.
ENUT = Essential nutrient.
[a] Constituent has no associated toxicity value for quantitative evaluation; therefore this constituent is not retained as a COPC.
Table contains detected constituents only.
ARAR/TBC = Applicable or Relevant and Appropriate Requirement / To Be Considered
COPC = Chemical of Potential Concern
IEPA = Illinois Environmental Protection Agency
TAL = target analyte list
N/A = Not available
mg/L = milligram per liter

Table 2.26
Occurrence, Distribution, and Selection of Chemicals of Potential Concern
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Seep Surface Water
Exposure Area: Floodplain Area 1C
Receptor: Trespasser
Receptor Age: Adolescent

Exposure Point	CAS Number	Chemical of Potential Concern	Units	Minimum Detect	Maximum Detect	Detection Frequency	Max Detect Location	Minimum Non-Detect RANGE		Maximum Non-Detect RANGE	Concentration used for Screening [1]	Background Value [2]	Screening Toxicity Value [3,4]	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Final COPC Flag (Y/N)	Rationale for Selection or Deletion [5]
Seep Surface Water		**TAL-Metals and Cyanide**															
	7429-90-5	Aluminum	mg/L	0.0556	0.949	4/7	SP-10	0.0171	-	0.0397	0.949	4.8	3.5	N/A	N/A	N	BSL
	7440-38-2	Arsenic	mg/L	0.0066	0.0066	1/7	N003	0.0032	-	0.0032	0.0066	N/A	0.01	N/A	N/A	N	BSL
	7440-39-3	Barium	mg/L	0.0341	0.14	7/7	SP-10	N/A	-	N/A	0.14	0.092	2	N/A	N/A	N	BSTV
	7440-41-7	Beryllium	mg/L	0.00021	0.00021	1/7	SP-10	0.00018	-	0.0004	0.00021	0.00058	0.004	N/A	N/A	N	BSL
	7440-43-9	Cadmium	mg/L	0.0028	0.0039	3/7	N004	0.0005	-	0.0027	0.0039	N/A	0.005	N/A	N/A	N	BSTV
	7440-70-2	Calcium	mg/L	141	141	1/1	SP-10	N/A	-	N/A	141	70	N/A	N/A	N/A	N	ENUT
	7440-47-3	Chromium	mg/L	0.0016	0.0016	1/7	SP-10	0.0006	-	0.00066	0.0016	0.011	0.1	N/A	N/A	N	BSL
	7440-48-4	Cobalt	mg/L	0.0024	0.0074	2/7	N005	0.0016	-	0.0065	0.0074	0.0031	1	N/A	N/A	N	BSTV
	7440-50-8	Copper	mg/L	0.0125	0.146	4/7	N004	0.00062	-	0.0011	0.146	0.0099	0.65	N/A	N/A	N	BSTV
	7439-89-6	Iron	mg/L	0.302	15.3	7/7	N003	N/A	-	N/A	15.3	6.9	5	N/A	N/A	Y	ASTV
	7439-92-1	Lead	mg/L	0.0024	0.0171	4/7	SP-10	0.0013	-	0.0015	0.0171	0.013	0.0075	N/A	N/A	Y	ASTV
	7439-95-4	Magnesium	mg/L	50.1	50.1	1/1	SP-10	N/A	-	N/A	50.1	32	N/A	N/A	N/A	N	ENUT
	7439-96-5	Manganese	mg/L	0.0703	1.47	7/7	N005	N/A	-	N/A	1.47	0.23	0.15	N/A	N/A	Y	ASTV
	7440-02-0	Nickel	mg/L	0.0021	0.0076	4/7	N005	0.00076	-	0.0016	0.0076	0.011	0.1	N/A	N/A	N	BSL
	7440-09-7	Potassium	mg/L	3.31	3.31	1/1	SP-10	N/A	-	N/A	3.31	5.2	N/A	N/A	N/A	N	ENUT
	7440-23-5	Sodium	mg/L	53.8	53.8	1/1	SP-10	N/A	-	N/A	53.8	58	N/A	N/A	N/A	N	ENUT
	7440-62-2	Vanadium	mg/L	0.0034	0.0034	1/7	SP-10	0.00052	-	0.0011	0.0034	0.014	0.049	N/A	N/A	N	BSL
	7440-66-6	Zinc	mg/L	0.0701	0.972	7/7	N005	N/A	-	N/A	0.972	0.064	5	N/A	N/A	N	BSTV
		Metals-Filtered															
	7429-90-5	Aluminum	mg/L	0.015	0.015	1/1	SP-10	N/A	-	N/A	0.015	0.04	3.5	N/A	N/A	N	BSL
	7440-39-3	Barium	mg/L	0.0695	0.0695	1/1	SP-10	N/A	-	N/A	0.0695	0.054	2	N/A	N/A	N	BSTV
	7440-41-7	Beryllium	mg/L	0.00022	0.00022	1/1	SP-10	N/A	-	N/A	0.00022	0.00022	0.004	N/A	N/A	N	BSTV
	7440-70-2	Calcium	mg/L	138	138	1/1	SP-10	N/A	-	N/A	138	71	N/A	N/A	N/A	N	ENUT
	7439-89-6	Iron	mg/L	0.161	0.161	1/1	SP-10	N/A	-	N/A	0.161	N/A	5	N/A	N/A	N	BSTV
	7439-95-4	Magnesium	mg/L	51	51	1/1	SP-10	N/A	-	N/A	51	34	N/A	N/A	N/A	N	ENUT
	7439-96-5	Manganese	mg/L	0.0425	0.0425	1/1	SP-10	N/A	-	N/A	0.0425	0.011	0.15	N/A	N/A	N	BSTV
	7440-09-7	Potassium	mg/L	3.6	3.6	1/1	SP-10	N/A	-	N/A	3.6	6.1	N/A	N/A	N/A	N	ENUT
	7782-49-2	Selenium	mg/L	0.0052	0.0052	1/1	SP-10	N/A	-	N/A	0.0052	0.0034	0.05	N/A	N/A	N	BSTV
	7440-23-5	Sodium	mg/L	55.6	55.6	1/1	SP-10	N/A	-	N/A	55.6	63	N/A	N/A	N/A	N	ENUT
	7440-62-2	Vanadium	mg/L	0.00047	0.00047	1/1	SP-10	N/A	-	N/A	0.00047	0.0053	0.049	N/A	N/A	N	BSL
	7440-66-6	Zinc	mg/L	0.0293	0.0293	1/1	SP-10	N/A	-	N/A	0.0293	N/A	5	N/A	N/A	N	BSTV
		Miscellaneous															
	7664-41-7	Ammonia	mg/L	0.376	88.5	7/7	DPN003-081707	N/A	-	N/A	88.5	0.079	N/A	N/A	N/A	Y	ABSL
	16887-00-6	Chloride	mg/L	124	124	1/1	SP10-SW1	N/A	-	N/A	124	100	200	N/A	N/A	N	BSTV
	16984-48-8	Fluoride	mg/L	0.275	0.595	6/7	DPN004-081707	0.2	-	0.2	0.595	0.5	4	N/A	N/A	N	BSL
	14797-55-8	Nitrate as N	mg/L	0.0367	1.17	4/7	SP10-SW1	0.0326	-	0.05	1.17	1.5	10	N/A	N/A	N	BSL
	14797-65-0	Nitrite as N	mg/L	0.215	0.215	1/7	DPN004-081707	0.05	-	0.05	0.215	N/A	3.7	1	MCL	N	BSTV
	7723-14-0	Phosphorus	mg/L	4.75	28.9	6/7	DPN004-081707	0.25	-	0.25	28.9	0.63	N/A	N/A	N/A	Y	ABSL
	14808-79-8	Sulfate	mg/L	186	1240	7/7	DPN003-081707	N/A	-	N/A	1240	78	400	N/A	N/A	N	BSTV

Notes:

[1] Maximum concentration was used as the screening concentration.

[2] Background values represent Upper Prediction Limits (UPLs) from Goose Lake data. When UPLs could not be calculated due to small sample size, maximum background values were used provided that the maximum concentration was not an outlier.

[3] Screening toxicity value represents the most conservative screening criteria from USEPA Maximum Contaminant Levels, IEPA Derived Water Quality Criteria, Tiered Approach to Corrective Action Objectives (TACO) Groundwater Remediation Objectives (Class I), and non-TACO or provisional remediation objectives.

[4] For original screening toxicity value prior to adjustment for Mixture Rule, refer to Appendix E tables.

[5] Rationale codes:
BSL = Excluded based on comparison to background value.
ABSL = Retained because screening concentration is above background and no screening toxicity value is available.
ASTV = Retained because screening concentration is above screening toxicity value.
BSTV = Excluded because screening concentration is below screening toxicity value.
NSTV = No available screening toxicity value.
ENUT = Essential nutrient.

Table contains detected constituents only.
ARAR/TBC = Applicable or Relevant and Appropriate Requirement / To Be Considered
COPC = Chemical of Potential Concern
IEPA = Illinois Environmental Protection Agency
TAL = target analyte list
N/A = Not available
mg/L = milligram per liter

Table 2.27
Occurrence, Distribution, and Selection of Chemicals of Potential Concern
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Fish Fillet
Exposure Area: Lake-wide
Receptor: Boat Angler, Shoreline Angler
Receptor Age: Adult and Child

Exposure Point	CAS Number	Chemical of Potential Concern	Units	Minimum Detect	Maximum Detect	Detection Frequency	Max Detect Location	Minimum Non-Detect RANGE		Maximum Non-Detect RANGE	Concentration used for Screening [1]	Background Value [2]	Screening Toxicity Value [3,4]	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Final COPC Flag (Y/N)	Rationale for Selection or Deletion [5]
Fish Fillet		**TAL-Metals and Cyanide**															
	7429-90-5	Aluminum	mg/kg	1.19	4.72	8/45	OU5-FI1-010	18.3	-	19.9	4.72	20	1,350	N/A	N/A	N	BSL
	7440-38-2	Arsenic	mg/kg	0.276	0.349	3/45	OU5-FI1-010	0.911	-	0.999	0.349	0.43	0.406	N/A	N/A	N	BSL
	7440-39-3	Barium	mg/kg	0.0458	19	32/45	OU5-FI2-033	18.4	-	19.9	19	19	270	N/A	N/A	N	BSTV
	7440-41-7	Beryllium	mg/kg	0.014	0.0313	32/45	OU5-FI3-044	0.45	-	0.498	0.0313	0.026	2.7	N/A	N/A	N	BSTV
	7440-70-2	Calcium	mg/kg	82.7	7130	45/45	OU5-FI1-059	N/A	-	N/A	7130	0.12	N/A	N/A	N/A	N	ENUT
	7440-47-3	Chromium	mg/kg	0.129	0.389	16/45	OU5-FI1-059	0.911	-	0.999	0.389	0.34	4.06	N/A	N/A	N	BSTV
	7440-50-8	Copper	mg/kg	0.187	0.901	42/45	OU5-FI3-073	2.42	-	2.47	0.901	2.5	54.1	N/A	N/A	N	HYP
	7439-89-6	Iron	mg/kg	3.85	18.1	22/45	OU5-FI2-062	9.25	-	11.8	18.1	25	946	N/A	N/A	N	HYP
	7439-92-1	Lead	mg/kg	0.132	0.215	8/45	OU5-FI1-051,OU5-FI3-074	0.911	-	0.999	0.215	0.21	N/A	N/A	N/A	Y	ABSL
	7439-95-4	Magnesium	mg/kg	160	482	45/45	OU5-FI1-051	N/A	-	N/A	482	500	N/A	N/A	N/A	N	ENUT
	7439-96-5	Manganese	mg/kg	0.0775	3.89	43/45	OU5-FI3-040	1.42	-	1.45	3.89	1.1	189	N/A	N/A	N	BSTV
	7439-97-6	Mercury	mg/kg	0.0384	0.155	21/45	OU5-FI3-044	0.0786	-	0.101	0.155	0.14	0.216	N/A	N/A	N	BSTV
	7440-02-0	Nickel	mg/kg	0.0409	0.252	5/45	OU5-FI2-034	3.67	-	3.97	0.252	0.07	27	N/A	N/A	N	BSTV
	7440-09-7	Potassium	mg/kg	1770	6100	45/45	OU5-FI1-051	N/A	-	N/A	6100	6600	N/A	N/A	N/A	N	ENUT
	7782-49-2	Selenium	mg/kg	0.624	1.77	41/45	OU5-FI1-051	3.2	-	3.41	1.77	2.2	6.76	N/A	N/A	N	HYP
	7440-23-5	Sodium	mg/kg	413	1560	45/45	OU5-FI3-039	N/A	-	N/A	1560	1500	N/A	N/A	N/A	N	ENUT
	7440-62-2	Vanadium	mg/kg	0.041	0.05	2/45	OU5-FI3-040	4.58	-	4.96	0.05	0.032	0.0946	N/A	N/A	N	BSTV
	7440-66-6	Zinc	mg/kg	3.15	28.7	45/45	OU5-FI3-074	N/A	-	N/A	28.7	20	406	N/A	N/A	N	BSTV

Notes:
[1] Maximum concentration was used as the screening concentration.
[2] Background values represent Upper Prediction Limits (UPLs) from Goose Lake data. When UPLs could not be calculated due to small sample size, maximum background values were used provided that the maximum concentration was not an outlier.
[3] Screening toxicity value represents the USEPA Regional Screening Levels for fish tissue.
[4] For original screening toxicity value prior to adjustment for Mixture Rule, refer to Appendix E tables.
[5] Rationale codes:
HYP = Excluded based on hypothesis testing which compared site concentrations to background concentrations, and indicated no significant differences.
BSL = Excluded based on comparison to background value.
ABSL = Retained because screening concentration is above background and no screening toxicity value is available.
BSTV = Excluded because screening concentration is below screening toxicity value.
ENUT = Essential nutrient.
Table contains detected constituents only.
ARAR/TBC = Applicable or Relevant and Appropriate Requirement / To Be Considered
COPC = Chemical of Potential Concern
TAL = target analyte list
N/A = Not available
mg/kg = milligram per kilogram

Table 2.28
HCOPC Summary Table
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

	Floodplain Surface Soil				Floodplain Surface Soil to Groundwater				Floodplain Surface and Subsurface Soil			Floodplain Surface and Subsurface Soil to Groundwater		
Constituent	**Area 1B (trespasser)**	**Area 1C**	**Area 2**	**Area 3**	**Area 1B (trespasser)**	**Area 1C**	**Area 2**	**Area 3**	**Area 1B (maintenance)**	**Area 2**	**Area 2/3 (farmer)**	**Area 1B (maintenance)**	**Area 2**	**Area 2/3 (farmer)**
Benzo(a)anthracene	X		X	X				X	X	X				
Benzo(a)pyrene	X		X	X				X	X	X				
Benzo(b)fluoranthene	X		X	X				X	X	X				
Benzo(g,h,i)perylene	X		X	X					X	X				
Benzo(k)fluoranthene	X		X	X				X	X	X				
Chrysene	X		X	X				X	X	X				
Dibenz(a,h)anthracene	X		X	X				X	X	X				
Indeno(1,2,3-cd)pyrene	X		X	X				X	X	X				
Naphthalene														
Aroclor 1254		X			X	X						X		
Aroclor 1260						X								
Beta-BHC								X						
Dieldrin					X	X						X	X	
Gamma-BHC (Lindane)														
Antimony					X			X				X		
Arsenic	X	X	X		X	X			X	X		X		
Barium	X	X	X		X	X	X		X	X		X	X	
Cadmium	X	X			X	X	X		X			X	X	
Chromium						X	X	X					X	X
Cobalt		X			X	X	X		X			X	X	
Copper		X							X					
Cyanide												X		
Iron	X	X	X		X	X	X		X	X		X	X	
Lead	X	X			X	X	X		X			X	X	
Manganese	X	X	X		X	X	X		X	X		X	X	
Mercury					X				X			X		
Selenium					X	X						X		
Silver					X							X		
Zinc	X	X			X	X			X			X		
Iron (filtered)														
Manganese (filtered)														
Ammonia														
Chloride														
Fluoride	X					X			X					
Nitrate as N														
Phosphorus, Total														
Sulfate														

Notes:

X = Constituent identified as human chemical of potential concern (HCOPC)

Table 2.28
HCOPC Summary Table
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

	Surface Sediment		Subsurface Sediment			Seep Sediment			Surface Water		Seep Surface Water			Fish
Constituent	**Area 1A**	**Lake-wide**	**Area 1A**	**Area 1B**	**Area 2**	**Area 1A**	**Area 1B**	**Area 1C**	**Lakewide**	**Eastern Lake**	**Area 1A**	**Area 1B**	**Area 1C**	**Lake-wide**
Benzo(a)anthracene	X	X	X	X	X									
Benzo(a)pyrene	X	X	X	X	X									
Benzo(b)fluoranthene	X	X	X	X	X									
Benzo(g,h,i)perylene	X	X	X	X	X									
Benzo(k)fluoranthene	X	X	X	X	X									
Chrysene	X	X	X	X	X									
Dibenz(a,h)anthracene	X	X	X	X	X									
Indeno(1,2,3-cd)pyrene	X	X	X	X	X									
Naphthalene	X	X	X	X										
Aroclor 1254														
Aroclor 1260														
Beta-BHC														
Dieldrin														
Gamma-BHC (Lindane)		X												
Antimony														
Arsenic	X	X	X	X	X	X	X							
Barium	X	X	X	X	X									
Cadmium	X	X	X	X					X	X		X		
Chromium														
Cobalt		X		X										
Copper		X		X										
Cyanide														
Iron		X	X	X	X								X	
Lead	X	X	X	X			X		X	X			X	X
Manganese		X	X	X	X		X		X	X	X	X	X	
Mercury		X		X										
Selenium														
Silver														
Zinc	X	X	X	X	X		X							
Iron (filtered)											X	X		
Manganese (filtered)									X		X	X		
Ammonia									X	X	X	X	X	
Chloride									X	X				
Fluoride														
Nitrate as N									X	X				
Phosphorus, Total									X	X		X	X	
Sulfate									X					

Notes:

X = Constituent identified as human chemical of potential concern (HCOPC)

Table 3.1
Exposure Point Concentration Summary
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Floodplain Surface Soil
Exposure Area: Floodplain Area 1B [a]
Receptor: Trespasser
Receptor Age: Adolescent

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	95% UCL (Distribution) (2)	Maximum Concentration	Exposure Point Concentration		
						Value	Statistic (3)	Rationale (4,5)
Surface Soil	Benzo(a)anthracene	mg/kg	0.49	N/A	0.76	0.76	Maximum	Less than 5 detects
	Benzo(a)pyrene	mg/kg	0.605	N/A	0.95	0.95	Maximum	Less than 5 detects
	Benzo(b)fluoranthene	mg/kg	0.77	N/A	1.2	1.2	Maximum	Less than 5 detects
	Benzo(g,h,i)perylene	mg/kg	0.27	N/A	0.37	0.37	Maximum	Less than 5 detects
	Benzo(k)fluoranthene	mg/kg	0.575	N/A	0.9	0.9	Maximum	Less than 5 detects
	Chrysene	mg/kg	0.815	N/A	1.3	1.3	Maximum	Less than 5 detects
	Dibenz(a,h)anthracene	mg/kg	0.35	N/A	0.35	0.35	Maximum	Less than 5 detects
	Indeno(1,2,3-cd)pyrene	mg/kg	0.435	N/A	0.65	0.65	Maximum	Less than 5 detects
	Arsenic	mg/kg	62.07	292.3 (NP)	390	292.3	97.5% UCL - NP	W - Test (2)
	Barium	mg/kg	1860	3532 (G)	8000	3532	95% UCL - G	AD/KS - Test
	Cadmium	mg/kg	425.1	1047 (G)	2490	1047	95% UCL - T	AD/KS - Test
	Iron	mg/kg	31500	37882 (N)	50000	37882	95% UCL - G	W - Test (1)
	Lead	mg/kg	1903	4275 (LN)	12500	1903	Mean	See note [b]
	Manganese	mg/kg	877.4	1093 (N)	1600	1093	95% UCL - T	W - Test (1)
	Zinc	mg/kg	26964	60975 (G)	150000	60975	95% UCL - G	AD/KS - Test

Notes:

The same Exposure Point Concentration will be used for both Reasonable Maximum Exposure and Central Tendency Exposure scenarios.

mg/kg = milligrams per kilogram

N/A = Not applicable

(1) Arithmetic mean is based on detected values only.

(2) Upper Confidence Level (UCL) calculations were performed using ProUCL version 4.00.04 (February 2009), developed by Lockheed-Martin for USEPA.
NP = Non-parametric; LN = Lognormal; N = Normal; G = Gamma.

(3) Exposure Point Concentration calculation statistics detailed below:
99% UCL - NP = Calculated using 99% Chebyshev (Mean, Std) non-parametric procedures.
95% UCL - G = Calculated using 95% Approximate Gamma UCL non-parametric procedures.
95% UCL - T = Calculated using 95% Student's t normal distribution-based procedures.
Mean = Arithmetic mean of detected values.
Maximum = Maximum detected value.

(4) Shapiro-Wilk W Test used to test the normality or lognormality of the data distribution. Anderson-Darling and Kolmogorov-Smirnov Test statistics used for gamma distributions.
W - Test (1) = Shapiro-Wilk W Test indicates data are either normally or log-normally distributed.
W - Test (2) = Shapiro-Wilk W Test indicates data are neither normally or log-normally distributed and do not follow a discernable distribution.
AD/KS - Test = Anderson-Darling and Kolmogorov-Smirnov Test indicates data are gamma distributed.

(5) Based on USEPA guidance (EPA/600/R-07/038 ProUCL Version 4.00.04 User Guide, February 2009), a UCL is not recommended to be calculated for sample sizes less than 8 observations, or less than 5 detected observations. The maximum detected concentration is the default value.

[a] Refer to Appendix B, Table B-1 for a list of samples included in this exposure area.

[b] Because there is no toxicity value for lead, this constituent will be evaluated with the use of USEPA lead models. The EPC used in these lead models will be the arithmetic mean.

Table 3.2
Exposure Point Concentration Summary
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Floodplain Surface Soil to Groundwater
Exposure Area: Floodplain Area 1B [a]
Receptor: Trespasser
Receptor Age: Adolescent

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	95% UCL (Distribution) (2)	Maximum Concentration	Exposure Point Concentration		
						Value	Statistic (3)	Rationale (4, 5)
Surface Soil	Aroclor 1254	mg/kg	0.15	N/A	0.15	0.15	Maximum	Less than 5 detects
	Dieldrin	mg/kg	0.0088	N/A	0.0088	0.0088	Maximum	Less than 5 detects
	Antimony	mg/kg	2.69	N/A	5.8	5.8	Maximum	Less than 5 detects
	Cobalt	mg/kg	13.55	16.1 (N)	18.8	16.1	95% UCL - T	W - Test (1)
	Mercury	mg/kg	2.195	3.494 (N)	6.8	3.494	95% UCL - T	W - Test (1)
	Selenium	mg/kg	4.7	6.761 (G)	14.2	6.761	95% UCL - G	AD/KS - Test
	Silver	mg/kg	11.08	26.74 (LN)	68.7	26.74	95% UCL - CMVUE	W - Test (1)
	Fluoride	mg/kg	1.02	N/A	1.48	1.48	Maximum	Less than 5 detects

Notes:

The same Exposure Point Concentration will be used for both Reasonable Maximum Exposure and Central Tendency Exposure scenarios.

mg/kg = milligrams per kilogram

N/A = Not applicable

(1) Arithmetic mean is based on detected values only.

(2) Upper Confidence Level (UCL) calculations were performed using ProUCL version 4.00.04 (February 2009), developed by Lockheed-Martin for USEPA.
NP = Non-parametric; LN = Lognormal; N = Normal; G = Gamma.

(3) Exposure Point Concentration calculation statistics detailed below:
99% UCL - NP = Calculated using 99% Chebyshev (Mean, Std) non-parametric procedures.
95% UCL - G = Calculated using 95% Approximate Gamma UCL non-parametric procedures.
95% UCL - T = Calculated using 95% Student's t normal distribution-based procedures.
95% UCL - CMVUE = Calculated using 95% Chebyshev lognormal distribution procedures.
Mean = Arithmetic mean of detected values.
Maximum = Maximum detected value.

(4) Shapiro-Wilk W Test used to test the normality or lognormality of the data distribution. Anderson-Darling and Kolmogorov-Smirnov Test statistics used for gamma distributions.
W - Test (1) = Shapiro-Wilk W Test indicates data are either normally or log-normally distributed.
AD/KS - Test = Anderson-Darling and Kolmogorov-Smirnov Test indicates data are gamma distributed.

(5) Based on USEPA guidance (EPA/600/R-07/038 ProUCL Version 4.00.04 User Guide, February 2009), a UCL is not recommended to be calculated for sample sizes less than 8 observations, or less than 5 detected observations. The maximum detected concentration is the default value.

[a] Refer to Appendix B, Table B-1 for a list of samples included in this exposure area.

Table 3.3
Exposure Point Concentration Summary
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Floodplain Surface Soil
Exposure Area: Floodplain Area 1C [a]
Receptor: Trespasser
Receptor Age: Adolescent

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	95% UCL (Distribution) (2)	Maximum Concentration	Exposure Point Concentration		
						Value	Statistic (3)	Rationale (4, 5)
Surface Soil	Aroclor 1254	mg/kg	0.26	N/A	0.26	0.26	Maximum	Less than 5 detects
	Arsenic	mg/kg	13.85	22.85 (NP)	49.3	22.85	95% UCL - NP	W - Test (2)
	Barium	mg/kg	767.1	1322 (LN)	3230	1322	95% UCL - H	W - Test (1)
	Cadmium	mg/kg	49.67	68.29 (G)	168	68.29	95% UCL - G	AD/KS - Test
	Cobalt	mg/kg	20.07	25.02 (G)	103	25.02	95% UCL - G	AD/KS - Test
	Copper	mg/kg	785.2	3706 (NP)	8310	3706	95% UCL - NP	W - Test (2)
	Iron	mg/kg	37034	47560 (N)	184000	47560	95% UCL - MT	W - Test (2)
	Lead	mg/kg	301.7	497.7 (LN)	2280	302	Mean	See note [b]
	Manganese	mg/kg	1678	2166 (LN)	10100	2166	95% UCL - H	W - Test (1)
	Zinc	mg/kg	10914	15891 (G)	65300	15891	95% UCL - G	AD/KS - Test

Notes:

The same Exposure Point Concentration will be used for both Reasonable Maximum Exposure and Central Tendency Exposure scenarios.

mg/kg = milligrams per kilogram

N/A = Not applicable

(1) Arithmetic mean is based on detected values only.

(2) Upper Confidence Level (UCL) calculations were performed using ProUCL version 4.00.04 (February 2009), developed by Lockheed-Martin for USEPA.
NP = Non-parametric; LN = Lognormal; N = Normal; G = Gamma.

(3) Exposure Point Concentration calculation statistics:
95% UCL - NP = Calculated using 95% Chebyshev (Mean, Std) non-parametric procedures.
95% UCL - G = Calculated using 95% Approximate Gamma UCL non-parametric procedures.
95% UCL - H = Calculated using 95% H-UCL lognormal distribution procedures.
95% UCL - MT = Calculated using 95% Modified Student's t normal distribution-based procedures.
95% UCL - T = Calculated using 95% Student's t normal distribution-based procedures.
95% UCL - KMC = Calculated using 95% Kaplan-Meier Chebyshev non-parametric procedures.
Mean = Arithmetic mean of detected values.
Maximum = Maximum detected value.

(4) Shapiro-Wilk W Test used to test the normality or lognormality of the data distribution. Anderson-Darling and Kolmogorov-Smirnov Test statistics used for gamma distributions.
W - Test (1) = Shapiro-Wilk W Test indicates data are either normally or log-normally distributed.
W - Test (2) = Shapiro-Wilk W Test indicates data are neither normally or log-normally distributed and do not follow a discernable distribution.
AD/KS - Test = Anderson-Darling and Kolmogorov-Smirnov Test indicates data are gamma distributed.

(5) Based on USEPA guidance (EPA/600/R-07/038 ProUCL Version 4.00.04 User Guide, February 2009), a UCL is not recommended to be calculated for sample sizes less than 8 observations, or less than 5 detected observations. The maximum detected concentration is the default value.

[a] Refer to Appendix B, Table B-1 for a list of samples included in this exposure area.

[b] Because there is no toxicity value for lead, this constituent will be evaluated with the use of USEPA lead models. The EPC used in these lead models will be the arithmetic mean.

Table 3.4
Exposure Point Concentration Summary
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Floodplain Surface Soil to Groundwater
Exposure Area: Floodplain Area 1C [a]
Receptor: Trespasser
Receptor Age: Adolescent

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	95% UCL (Distribution) (2)	Maximum Concentration	Exposure Point Concentration		
						Value	Statistic (3)	Rationale (4, 5)
Surface Soil	Aroclor 1260	mg/kg	0.05	N/A	0.05	0.05	Maximum	Less than 5 detects
	Dieldrin	mg/kg	0.00717	N/A	0.013	0.013	Maximum	Less than 5 detects
	Chromium	mg/kg	32.73	44.6 (NP)	72.4	44.6	95% UCL - NP	W - Test (2)
	Selenium	mg/kg	2.303	3.719 (NP)	7.9	3.719	95% UCL - KMC	W - Test (2)
	Fluoride	mg/kg	1.6	N/A	2.23	2.23	Maximum	Less than 5 detects

Notes:

The same Exposure Point Concentration will be used for both Reasonable Maximum Exposure and Central Tendency Exposure scenarios.

mg/kg = milligrams per kilogram

N/A = Not applicable

(1) Arithmetic mean is based on detected values only.

(2) Upper Confidence Level (UCL) calculations were performed using ProUCL version 4.00.04 (February 2009), developed by Lockheed-Martin for USEPA.
NP = Non-parametric; LN = Lognormal; N = Normal; G = Gamma.

(3) Exposure Point Concentration calculation statistics detailed below:
95% UCL - NP = Calculated using 95% Chebyshev (Mean, Std) non-parametric procedures.
95% UCL - H = Calculated using 95% H-UCL lognormal distribution procedures.
95% UCL - KMC = Calculated using 95% Kaplan-Meier Chebyshev non-parametric procedures.
Mean = Arithmetic mean of detected values.
Maximum = Maximum detected value.

(4) Shapiro-Wilk W Test used to test the normality or lognormality of the data distribution. Anderson-Darling and Kolmogorov-Smirnov Test statistics used for gamma distributions.
W - Test (1) = Shapiro-Wilk W Test indicates data are either normally or log-normally distributed.
W - Test (2) = Shapiro-Wilk W Test indicates data are neither normally or log-normally distributed and do not follow a discernable distribution.

(5) Based on USEPA guidance (EPA/600/R-07/038 ProUCL Version 4.00.04 User Guide, February 2009), a UCL is not recommended to be calculated for sample sizes less than 8 observations, or less than 5 detected observations. The maximum detected concentration is the default value.

[a] Refer to Appendix B, Table B-1 for a list of samples included in this exposure area.

Table 3.5
Exposure Point Concentration Summary
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Floodplain Surface Soil
Exposure Area: Floodplain Area 2 [a]
Receptor: Trespasser
Receptor Age: Adolescent

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	95% UCL (Distribution) (2)	Maximum Concentration	Exposure Point Concentration		
						Value	Statistic (3)	Rationale (4)
Surface Soil	Benzo(a)anthracene	mg/kg	0.12	N/A	0.12	0.12	Maximum	Less than 8 samples
	Benzo(a)pyrene	mg/kg	0.17	N/A	0.17	0.17	Maximum	Less than 8 samples
	Benzo(b)fluoranthene	mg/kg	0.17	N/A	0.17	0.17	Maximum	Less than 8 samples
	Benzo(k)fluoranthene	mg/kg	0.16	N/A	0.16	0.16	Maximum	Less than 8 samples
	Chrysene	mg/kg	0.14	N/A	0.17	0.17	Maximum	Less than 8 samples
	Indeno(1,2,3-cd)pyrene	mg/kg	0.15	N/A	0.15	0.15	Maximum	Less than 8 samples
	Arsenic	mg/kg	8.65	10.33 (N)	28.2	10.33	95% UCL - MT	W - Test (2)
	Barium	mg/kg	292.5	510 (NP)	1180	510	95% UCL - NP	W - Test (2)
	Iron	mg/kg	25674	27352 (N)	36.4	27352	95% UCL - T	W - Test (2)

Notes:

The same Exposure Point Concentration will be used for both Reasonable Maximum Exposure and Central Tendency Exposure scenarios.

mg/kg = milligrams per kilogram

N/A = Not applicable

(1) Arithmetic mean is based on detected values only.

(2) Upper Confidence Level (UCL) calculations were performed using ProUCL version 4.00.04 (February 2009), developed by Lockheed-Martin for USEPA.
NP = Non-parametric; LN = Lognormal; N = Normal; G = Gamma.

(3) Exposure Point Concentration calculation statistics detailed below:
95% UCL - MT = Calculated using 95% Modified t normal distribution-based procedures.
95% UCL - T = Calculated using 95% Student's t normal distribution-based procedures.
95% UCL - NP = Calculated using 95% Chebyshev (Mean, Std) non-parametric procedures.
Maximum = Maximum detected value.

(4) Shapiro-Wilk W Test used to test the normality or lognormality of the data distribution. Anderson-Darling and Kolmogorov-Smirnov Test statistics used for gamma distributions.
W - Test (2) = Shapiro-Wilk W Test indicates data are neither normally or log-normally distributed and do not follow a discernable distribution.
AD/KS - Test = Anderson-Darling and Kolmogorov-Smirnov Test indicates data are gamma distributed.

[a] Refer to Appendix B, Table B-1 for a list of samples included in this exposure area.

Table 3.6
Exposure Point Concentration Summary
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Floodplain Surface Soil to Groundwater
Exposure Area: Floodplain Area 2 [a]
Receptor: Trespasser
Receptor Age: Adolescent

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	95% UCL (Distribution) (2)	Maximum Concentration	Exposure Point Concentration		
						Value	Statistic (3)	Rationale (4)
Surface Soil	Cadmium	mg/kg	6.263	11.52 (NP)	25.5	11.52	95% UCL - NP	W - Test (2)
	Chromium	mg/kg	40.19	44.01 (N)	60.1	44.01	95% UCL - T	W - Test (2)
	Cobalt	mg/kg	9.588	10.14 (N)	12.4	10.14	95% UCL - T	AD/KS - Test
	Lead	mg/kg	60.34	73.95 (N)	189	60.34	Mean	See note [b]
	Manganese	mg/kg	683.8	735.6 (N)	1040	735.6	95% UCL - T	W - Test (1)

Notes:

The same Exposure Point Concentration will be used for both Reasonable Maximum Exposure and Central Tendency Exposure scenarios.

mg/kg = milligrams per kilogram

(1) Arithmetic mean is based on detected values only.

(2) Upper Confidence Level (UCL) calculations were performed using ProUCL version 4.0.04 (February 2009), developed by Lockheed-Martin for USEPA.
NP = Non-parametric; LN = Lognormal; N = Normal; G = Gamma.

(3) Exposure Point Concentration calculation statistics detailed below:
95% UCL - NP = Calculated using 95% Chebyshev (Mean, Std) non-parametric procedures.
95% UCL - T = Calculated using 95% Student's t normal distribution-based procedures.
Mean = Arithmetic Mean.

(4) Shapiro-Wilk W Test used to test the normality or lognormality of the data distribution. Anderson-Darling and Kolmogorov-Smirnov Test statistics used for gamma distributions.
W - Test (1) = Shapiro-Wilk W Test indicates data are either normally or log-normally distributed.
W - Test (2) = Shapiro-Wilk W Test indicates data are neither normally or log-normally distributed and do not follow a discernable distribution.
AD/KS - Test = Anderson-Darling and Kolmogorov-Smirnov Test indicates data follow approximate gamma distribution

[a] Refer to Appendix B, Table B-1 for a list of samples included in this exposure area.

[b] Because there is no toxicity value for lead, this constituent will be evaluated with the use of USEPA lead models. The EPC used in these lead models will be the arithmetic mean.

Table 3.7
Exposure Point Concentration Summary
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Floodplain Surface Soil
Exposure Area: Floodplain Area 3 [a]
Receptor: Trespasser
Receptor Age: Adolescent

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	95% UCL (Distribution) (2)	Maximum Concentration	Exposure Point Concentration		
						Value	Statistic (3)	Rationale (4,5)
Surface Soil	Benzo(a)anthracene	mg/kg	0.0757	N/A	0.12	0.12	Maximum	Less than 8 samples
	Benzo(a)pyrene	mg/kg	0.0852	N/A	0.14	0.14	Maximum	Less than 8 samples
	Benzo(b)fluoranthene	mg/kg	0.153	N/A	0.26	0.26	Maximum	Less than 8 samples
	Benzo(k)fluoranthene	mg/kg	0.0513	N/A	0.08	0.08	Maximum	Less than 8 samples
	Chrysene	mg/kg	0.937	N/A	0.15	0.15	Maximum	Less than 8 samples
	Dibenz(a,h)anthracene	mg/kg	0.0213	N/A	0.034	0.034	Maximum	Less than 8 samples
	Indeno(1,2,3-cd)pyrene	mg/kg	0.726	N/A	0.12	0.12	Maximum	Less than 8 samples

Notes:

The same Exposure Point Concentration will be used for both Reasonable Maximum Exposure and Central Tendency Exposure scenarios.

mg/kg = milligrams per kilogram

N/A = Not applicable

(1) Arithmetic mean is based on detected values only.

(2) Upper Confidence Level (UCL) calculations were performed using ProUCL version 4.00.04 (February 2009), developed by Lockheed-Martin for USEPA.
NP = Non-parametric; LN = Lognormal; N = Normal; G = Gamma.

(3) Exposure Point Concentration calculation statistics detailed below.
Maximum = Maximum detected value.

(4) Shapiro-Wilk W Test used to test the normality or lognormality of the data distribution. Anderson-Darling and Kolmogorov-Smirnov Test statistics used for gamma distributions.
W - Test (1) = Shapiro-Wilk W Test indicates data are either normally or log-normally distributed.

(5) Based on USEPA guidance (EPA/600/R-07/038 ProUCL Version 4.00.04 User Guide, February 2009), a UCL is not recommended to be calculated for sample sizes less than 8 observations, or less than 5 detected observations. The maximum detected concentration is the default value.

[a] Refer to Appendix B, Table B-1 for a list of samples included in this exposure area.

Table 3.8
Exposure Point Concentration Summary
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Floodplain Surface Soil to Groundwater
Exposure Area: Floodplain Area 3 [a]
Receptor: Trespasser
Receptor Age: Adolescent

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	95% UCL (Distribution) (2)	Maximum Concentration	Exposure Point Concentration		
						Value	Statistic (3)	Rationale (4, 5)
Surface Soil	Beta-BHC	mg/kg	0.028	N/A	0.028	0.028	Maximum	Less than 5 detects
	Antimony	mg/kg	1.35	N/A	1.4	1.4	Maximum	Less than 5 detects
	Chromium	mg/kg	44.71	46.83 (N)	55.5	46.83	95% UCL - T	W - Test (1)

Notes:

The same Exposure Point Concentration will be used for both Reasonable Maximum Exposure and Central Tendency Exposure scenarios.

mg/kg = milligrams per kilogram

N/A = Not applicable

(1) Arithmetic mean is based on detected values only.

(2) Upper Confidence Level (UCL) calculations were performed using ProUCL version 4.00.04 (February 2009), developed by Lockheed-Martin for USEPA.
NP = Non-parametric; LN = Lognormal; N = Normal; G = Gamma.

(3) Exposure Point Concentration calculation statistics detailed below.
95% UCL - G = Calculated using 95% Approximate Gamma UCL non-parametric procedures.
95% UCL - T = Calculated using 95% Student's t normal distribution-based procedures.
Maximum = Maximum detected value.

(4) Shapiro-Wilk W Test used to test the normality or lognormality of the data distribution. Anderson-Darling and Kolmogorov-Smirnov Test statistics used for gamma distributions.
W - Test (1) = Shapiro-Wilk W Test indicates data are either normally or log-normally distributed.
AD/KS - Test = Anderson-Darling and Kolmogorov-Smirnov Test indicates data follow approximate gamma distribution

(5) Based on USEPA guidance (EPA/600/R-07/038 ProUCL Version 4.00.04 User Guide, February 2009), a UCL is not recommended to be calculated for sample sizes less than 8 observations, or less than 5 detected observations. The maximum detected concentration is the default value.

[a] Refer to Appendix B, Table B-1 for a list of samples included in this exposure area.

Table 3.9
Exposure Point Concentration Summary
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Floodplain Surface and Subsurface Soil
Exposure Area: Floodplain Area 1B [a]
Receptor: Utility Maintenance Worker
Receptor Age: Adult

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	95% UCL (Distribution) (2)	Maximum Concentration	Exposure Point Concentration		
						Value	Statistic (3)	Rationale (4, 5)
Surface and Subsurface Soil	Benzo(a)anthracene	mg/kg	0.457	N/A	0.76	0.76	Maximum	Less than 5 detects
	Benzo(a)pyrene	mg/kg	0.477	N/A	0.95	0.95	Maximum	Less than 5 detects
	Benzo(b)fluoranthene	mg/kg	0.627	N/A	1.2	1.2	Maximum	Less than 5 detects
	Benzo(g,h,i)perylene	mg/kg	0.27	N/A	0.37	0.37	Maximum	Less than 5 detects
	Benzo(k)fluoranthene	mg/kg	0.46	N/A	0.9	0.9	Maximum	Less than 5 detects
	Chrysene	mg/kg	0.555	N/A	1.3	1.3	Maximum	Less than 5 detects
	Dibenz(a,h)anthracene	mg/kg	0.35	N/A	0.35	0.35	Maximum	Less than 5 detects
	Indeno(1,2,3-cd)pyrene	mg/kg	0.435	N/A	0.65	0.65	Maximum	Less than 5 detects
	Arsenic	mg/kg	51.5	227.3 (NP)	390	227.3	99% UCL - NP	W - Test (2)
	Barium	mg/kg	1614	2225 (G)	8000	2225	95% UCL - G	AD/KS - Test
	Cadmium	mg/kg	312.7	867.6 (NP)	2490	794.5	95% UCL - NP	W - Test (1)
	Cobalt	mg/kg	13.08	15.61 (LN)	35.6	17.71	95% UCL - MT	W - Test (1)
	Copper	mg/kg	541.2	901 (G)	3580	1214	95% UCL - G	AD/KS - Test
	Iron	mg/kg	34633	38890 (N)	66300	41704	95% UCL - T	W - Test (1)
	Lead	mg/kg	1590	2981 (G)	12500	1590	Mean	See note [b]
	Manganese	mg/kg	737.1	871.6 (N)	1630	984	95% UCL - T	W - Test (1)
	Mercury	mg/kg	2.429	6.797 (NP)	16.3	6.931	97.5% UCL - KMC	W - Test (1)
	Zinc	mg/kg	22588	42913 (G)	181000	56540	95% UCL - AG	AD/KS - Test

Notes:

The same Exposure Point Concentration will be used for both Reasonable Maximum Exposure and Central Tendency Exposure scenarios.

mg/kg = milligrams per kilogram

N/A = Not applicable

(1) Arithmetic mean is based on detected values only.

(2) Upper Confidence Level (UCL) calculations were performed using ProUCL version 4.00.04 (February 2009), developed by Lockheed-Martin for USEPA.
NP = Non-parametric; LN = Lognormal; N = Normal; G = Gamma.

(3) Exposure Point Concentration calculation statistics detailed below.
95% UCL - T = Calculated using 95% Student's t normal distribution-based procedures.
95% UCL - MT = Calculated using 95% Modified t normal distribution-based procedures.
95% UCL - G = Calculated using 95% Approximate Gamma UCL non-parametric procedures.
95% UCL - AG = Calculated using 95% Adjusted Gamma UCL non-parametric procedures.
97.5% UCL - KMC = Calculated using 97.5% Kaplan-Meier Chebyshev non-parametric procedures.
95% UCL - NP = Calculated using 95% Chebyshev (Mean, Std) non-parametric procedures.
99% UCL - NP = Calculated using 99% Chebyshev (Mean, Std) non-parametric procedures.
Mean = Arithmetic Mean.
Maximum = Maximum detected value.

(4) Shapiro-Wilk W Test used to test the normality or lognormality of the data distribution. Anderson-Darling and Kolmogorov-Smirnov Test statistics used for gamma distributions.
W - Test (1) = Shapiro-Wilk W Test indicates data are either normally or log-normally distributed.
W - Test (2) = Shapiro-Wilk W Test indicates data are neither normally or log-normally distributed.
AD/KS - Test = Anderson-Darling and Kolmogorov-Smirnov Test indicates data follow approximate gamma distribution.

(5) Based on USEPA guidance (EPA/600/R-07/038 ProUCL Version 4.00.04 User Guide, February 2009), a UCL is not recommended to be calculated for sample sizes less than 8 observations, or less than 5 detected observations. The maximum detected concentration is the default value.

[a] Refer to Appendix B, Table B-1 for a list of samples included in this exposure area.

[b] Because there is no toxicity value for lead, this constituent will be evaluated with the use of USEPA lead models. The EPC used in these lead models will be the arithmetic mean.

Table 3.10
Exposure Point Concentration Summary
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Floodplain Surface and Subsurface Soil to Groundwater
Exposure Area: Floodplain Area 1B [a]
Receptor: Utility Maintenance Worker
Receptor Age: Adult

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	95% UCL (Distribution) (2)	Maximum Concentration	Exposure Point Concentration		
						Value	Statistic (3)	Rationale (4, 5)
Soil to Groundwater	Aroclor 1254	mg/kg	0.083	N/A	0.15	0.15	Maximum	Less than 5 detects
	Dieldrin	mg/kg	0.00547	N/A	0.0088	0.0088	Maximum	Less than 5 detects
	Antimony	mg/kg	2.605	4.071 (NP)	5.8	4.071	95% UCL - KMT	W - Test (2)
	Cyanide	mg/kg	11.8	N/A	31.9	31.9	Maximum	Less than 5 detects
	Selenium	mg/kg	6.225	14.56 (NP)	42.8	14.56	95% UCL - NP	W - Test (2)
	Silver	mg/kg	10.04	18.74 (G)	68.7	18.74	95% UCL - AG	AD/KS - Test
	Fluoride	mg/kg	2.76	N/A	34	34	Maximum	Less than 5 detects

Notes:

The same Exposure Point Concentration will be used for both Reasonable Maximum Exposure and Central Tendency Exposure scenarios.

mg/kg = milligrams per kilogram

N/A = Not applicable

(1) Arithmetic mean is based on detected values only.

(2) Upper Confidence Level (UCL) calculations were performed using ProUCL version 4.00.04 (February 2009), developed by Lockheed-Martin for USEPA.
NP = Non-parametric; LN = Lognormal; N = Normal; G = Gamma.

(3) Exposure Point Concentration calculation statistics detailed below:
99% UCL - NP = Calculated using 99% Chebyshev (Mean, Std) non-parametric procedures.
97.5% UCL - NP = Calculated using 97.5% Chebyshev (Mean, Std) non-parametric procedures.
95% UCL - NP = Calculated using 95% Chebyshev (Mean, Std) non-parametric procedures.
95% UCL - T = Calculated using 95% Student's t normal distribution-based procedures.
95% UCL - MT = Calculated using 95% Modified t normal distribution-based procedures.
95% UCL - G = Calculated using 95% Approximate Gamma UCL non-parametric procedures.
95% UCL - AG = Calculated using 95% Adjusted Gamma UCL non-parametric procedures.
95% UCL - KMT = Calculated using 95% Kaplan-Meier Student's t normal distribution-based procedures.
Maximum = Maximum detected value.

(4) Shapiro-Wilk W Test used to test the normality or lognormality of the data distribution. Anderson-Darling and Kolmogorov-Smirnov Test statistics used for gamma distributions.
W - Test (2) = Shapiro-Wilk W Test indicates data are neither normally or log-normally distributed.
AD/KS - Test = Anderson-Darling and Kolmogorov-Smirnov Test indicates data are gamma distributed.

(5) Based on USEPA guidance (EPA/600/R-07/038 ProUCL Version 4.00.04 User Guide, February 2009), a UCL is not recommended to be calculated for sample sizes less than 8 observations, or less than 5 detected observations. The maximum detected concentration is the default value.

[a] Refer to Appendix B, Table B-1 for a list of samples included in this exposure area.

Table 3.11
Exposure Point Concentration Summary
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Floodplain Surface and Subsurface Soil
Exposure Area: Floodplain Area 2 [a]
Receptor: Wildlife Worker and Hunter
Receptor Age: Adult

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	95% UCL (Distribution) (2)	Maximum Concentration	Exposure Point Concentration		
						Value	Statistic (3)	Rationale (4)
Surface and Subsurface Soil	Benzo(a)anthracene	mg/kg	0.13	N/A	0.14	0.14	Maximum	Less than 8 samples
	Benzo(a)pyrene	mg/kg	0.17	N/A	0.17	0.17	Maximum	Less than 8 samples
	Benzo(b)fluoranthene	mg/kg	0.17	N/A	0.17	0.17	Maximum	Less than 8 samples
	Benzo(k)fluoranthene	mg/kg	0.16	N/A	0.16	0.16	Maximum	Less than 8 samples
	Chrysene	mg/kg	0.153	N/A	0.18	0.18	Maximum	Less than 8 samples
	Indeno(1,2,3-cd)pyrene	mg/kg	0.15	N/A	0.15	0.15	Maximum	Less than 8 samples
	Arsenic	mg/kg	9.741	10.91 (N)	28.2	10.91	95% UCL - MT	W - Test (2)
	Barium	mg/kg	372.8	598.5 (NP)	1890	598.5	95% UCL - NP	W - Test (2)
	Iron	mg/kg	25869	27170 (N)	42800	27170	95% UCL - T	W - Test (2)
	Manganese	mg/kg	692.2	763.2 (G)	2070	763.2	95% UCL - G	AD/KS - Test

Notes:

The same Exposure Point Concentration will be used for both Reasonable Maximum Exposure and Central Tendency Exposure scenarios.

mg/kg = milligrams per kilogram

N/A = Not applicable

(1) Arithmetic mean is based on detected values only.

(2) Upper Confidence Level (UCL) calculations were performed using ProUCL version 4.00.04 (February 2009), developed by Lockheed-Martin for USEPA.
NP = Non-parametric; LN = Lognormal; N = Normal; G = Gamma.

(3) Exposure Point Concentration calculation statistics detailed below:
95% UCL - T = Calculated using 95% Student's t normal distribution-based procedures.
95% UCL - MT = Calculated using 95% Modified t normal distribution-based procedures.
95% UCL - G = Calculated using 95% Approximate Gamma UCL non-parametric procedures.
95% UCL - KMBCA = Calculated using 95% Kaplan-Meier Bias-Corrected Accelerated Bootstrap non-parametric procedures.
Maximum = Maximum detected value.

(4) Shapiro-Wilk W Test used to test the normality or lognormality of the data distribution. Anderson-Darling and Kolmogorov-Smirnov Test statistics used for gamma distributions.
W - Test (2) = Shapiro-Wilk W Test indicates data are neither normally or log-normally distributed.
AD/KS - Test = Anderson-Darling and Kolmogorov-Smirnov Test indicates data follow approximate gamma distribution.

[a] Refer to Appendix B, Table B-1 for a list of samples included in this exposure area.

Table 3.12
Exposure Point Concentration Summary
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Floodplain Surface and Subsurface Soil to Groundwater
Exposure Area: Floodplain Area 2 [a]
Receptor: Wildlife Worker and Hunter
Receptor Age: Adult

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	95% UCL (Distribution) (2)	Maximum Concentration	Exposure Point Concentration		
						Value	Statistic (3)	Rationale (4)
Soil to Groundwater	Cadmium	mg/kg	7.124	9.006 (LN)	33.5	9.006	95% UCL - H	W - Test (1)
	Chromium	mg/kg	45.44	49.78 (N)	85.5	49.78	95% UCL - T	W - Test (2)
	Cobalt	mg/kg	9.497	9.926 (N)	14.1	9.926	95% UCL - T	W - Test (1)
	Dieldrin	mg/kg	0.00202	NA	0.0025	0.0025	Maximum	Less than 5 detects
	Lead	mg/kg	66.85	73.95 (N)	189	66.85	Mean	See note [b]

Notes:

The same Exposure Point Concentration will be used for both Reasonable Maximum Exposure and Central Tendency Exposure scenarios.

mg/kg = milligrams per kilogram

(1) Arithmetic mean is based on detected values only.

(2) Upper Confidence Level (UCL) calculations were performed using ProUCL version 4.00.04 (February 2009), developed by Lockheed-Martin for USEPA.
NP = Non-parametric; LN = Lognormal; N = Normal; G = Gamma.

(3) Exposure Point Concentration calculation statistics detailed below:
95% UCL - H = Calculated using 95% H-UCL lognormal distribution procedures.
95% UCL - T = Calculated using 95% Student's t normal distribution-based procedures.
95% UCL - NP = Calculated using 95% Chebyshev (Mean, Std) non-parametric procedures.
Mean = Arithmetic Mean.

(4) Shapiro-Wilk W Test used to test the normality or lognormality of the data distribution. Anderson-Darling and Kolmogorov-Smirnov Test statistics used for gamma distributions.
W - Test (1) = Shapiro-Wilk W Test indicates data are either normally or log-normally distributed.
W - Test (2) = Shapiro-Wilk W Test indicates data are neither normally or log-normally distributed.

[a] Refer to Appendix B, Table B-1 for a list of samples included in this exposure area.

[b] Because there is no toxicity value for lead, this constituent will be evaluated with the use of USEPA lead models. The EPC used in these lead models will be the arithmetic mean.

Table 3.13
Exposure Point Concentration Summary
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Floodplain Surface and Subsurface Soil
Exposure Area: Floodplain Area 2/3 [a]
Receptor: Farmer
Receptor Age: Adult

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	95% UCL (Distribution) (2)	Maximum Concentration	Exposure Point Concentration		
						Value	Statistic (3)	Rationale (4)
Surface and Subsurface Soil	None	--	--	--	--	--	--	--

Notes:

The same Exposure Point Concentration will be used for both Reasonable Maximum Exposure and Central Tendency Exposure scenarios.

mg/kg = milligrams per kilogram

(1) Arithmetic mean is based on detected values only.

(2) Upper Confidence Level (UCL) calculations were performed using ProUCL version 4.00.04 (February 2009), developed by Lockheed-Martin for USEPA.
NP = Non-parametric; LN = Lognormal; N = Normal; G = Gamma.

(3) Exposure Point Concentration calculation statistics detailed below:
95% UCL - T = Calculated using 95% Student's t normal distribution-based procedures.

(4) Shapiro-Wilk W Test used to test the normality or lognormality of the data distribution. Anderson-Darling and Kolmogorov-Smirnov Test statistics used for gamma distributions.
W - Test (1) = Shapiro-Wilk W Test indicates data are either normally or log-normally distributed.

[a] Refer to Appendix B, Table B-1 for a list of samples included in this exposure area.

Table 3.14
Exposure Point Concentration Summary
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Floodplain Surface and Subsurface Soil to Groundwater
Exposure Area: Floodplain Area 2/3 [a]
Receptor: Farmer
Receptor Age: Adult

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	95% UCL (Distribution) (2)	Maximum Concentration	Exposure Point Concentration		
						Value	Statistic (3)	Rationale (4)
Soil to Groundwater	Chromium	mg/kg	60.88	70.36 (N)	91.3	70.36	95% UCL - T	W - Test (1)

Notes:

The same Exposure Point Concentration will be used for both Reasonable Maximum Exposure and Central Tendency Exposure scenarios.

mg/kg = milligrams per kilogram

(1) Arithmetic mean is based on detected values only.

(2) Upper Confidence Level (UCL) calculations were performed using ProUCL version 4.00.04 (February 2009), developed by Lockheed-Martin for USEPA.
NP = Non-parametric; LN = Lognormal; N = Normal; G = Gamma.

(3) Exposure Point Concentration calculation statistics detailed below.
95% UCL - T = Calculated using 95% Student's t normal distribution-based procedures.

(4) Shapiro-Wilk W Test used to test the normality or lognormality of the data distribution. Anderson-Darling and Kolmogorov-Smirnov Test statistics used for gamma distributions.
W - Test (1) = Shapiro-Wilk W Test indicates data are either normally or log-normally distributed.

[a] Refer to Appendix B, Table B-1 for a list of samples included in this exposure area.

Table 3.15
Exposure Point Concentration Summary
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Surface Sediment
Exposure Area: Sediment Area 1A [a]
Receptor: Village Park Recreational User, Shoreline Angler
Receptor Age: Adult and Child

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	95% UCL (Distribution) (2)	Maximum Concentration	Exposure Point Concentration		
						Value	Statistic (3)	Rationale (4, 5)
Surface Sediment	Benzo(a)anthracene	mg/kg	0.748	N/A	4	4	Maximum	Less than 8 samples
	Benzo(a)pyrene	mg/kg	0.641	N/A	3.4	3.4	Maximum	Less than 8 samples
	Benzo(b)fluoranthene	mg/kg	0.54	N/A	2.8	2.8	Maximum	Less than 8 samples
	Benzo(g,h,i)perylene	mg/kg	0.236	N/A	1.2	1.2	Maximum	Less than 8 samples
	Benzo(k)fluoranthene	mg/kg	0.569	N/A	3	3	Maximum	Less than 8 samples
	Chrysene	mg/kg	0.672	N/A	3.5	3.5	Maximum	Less than 8 samples
	Dibenz(a,h)anthracene	mg/kg	0.103	N/A	0.55	0.55	Maximum	Less than 8 samples
	Indeno(1,2,3-cd)pyrene	mg/kg	0.325	N/A	1.7	1.7	Maximum	Less than 8 samples
	Napthalene	mg/kg	0.426	N/A	2.1	2.1	Maximum	Less than 8 samples
	Arsenic	mg/kg	12.51	16.91 (N)	26.85	16.91	95% UCL - T	W - Test (1)
	Barium	mg/kg	279.3	472 (G)	902	42	95% UCL - G	AD/KS - Test
	Cadmium	mg/kg	32.26	80.91 (NP)	113	80.91	95% UCL - KMC	AD/KS - Test
	Lead	mg/kg	270.9	631.8 (G)	1200	270.9	Mean	See note [b]
	Zinc	mg/kg	2981	4322 (N)	7105	4322	95% UCL - T	W-Test (1)

Notes:

The same Exposure Point Concentration will be used for both Reasonable Maximum Exposure and Central Tendency Exposure scenarios.

When available PAHs analytical data of EPA Methods 8270 and 8270-SIM for were combined for stastical calculations.

mg/kg = milligrams per kilogram

(1) Arithmetic mean is based on detected values only.

(2) Upper Confidence Level (UCL) calculations were performed using ProUCL version 4.00.04 (February 2009), developed by Lockheed-Martin for USEPA.
NP = Non-parametric; LN = Lognormal; N = Normal; G = Gamma.

(3) Exposure Point Concentration calculation statistics detailed below:
95% UCL - KMC = Calculated using 95% Kaplan Meier Chebyshev non-parametric procedures
95% UCL - KMT = Calculated using 95% Kaplan Meier Student's t non-parametric procedures
95% UCL - T = Calculated using 95% Student's t normal distribution-based procedures.
95% UCL - G = Calculated using 95% Approximate Gamma UCL non-parametric procedures.
Mean = Arithmetic Mean.
Maximum = Maximum detected value.

(4) Shapiro-Wilk W Test used to test the normality or lognormality of the data distribution. Anderson-Darling and Kolmogorov-Smirnov Test statistics used for gamma distributions
W - Test (1) = Shapiro-Wilk W Test indicates data are either normally or log-normally distributed.
AD/KS - Test = Anderson-Darling and Kolmogorov-Smirnov Test indicates data follow approximate gamma distribution

(5) Based on USEPA guidance (EPA/600/R-07/038 ProUCL Version 4.00.04 User Guide, February 2009), a UCL is not recommended to be calculated for sample sizes less than 8 observations, or less than 5 detected observations. The maximum detected concentration is the default value.

[a] Refer to Appendix B, Table B-2 for a list of samples included in this exposure area.

[b] Because there is no toxicity value for lead, this constituent will be evaluated with the use of USEPA lead models. The EPC used in these lead models will be the arithmetic me

Table 3.16
Exposure Point Concentration Summary
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Surface Sediment
Exposure Area: Lake-wide [a]
Receptor: Boater, Boat Angler, Lake-Wide Recreational User
Receptor Age: Adult and Child

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	95% UCL (Distribution) (2)	Maximum Concentration	Exposure Point Concentration		
						Value	Statistic (3)	Rationale (4, 5)
Surface Sediment	Benzo(a)anthracene	mg/kg	0.3043	0.1914 (NP)	4	0.1914	99% UCL - NP	W - Test (1)
	Benzo(a)pyrene	mg/kg	0.29	1.646 (NP)	3.4	1.646	99% UCL - NP	W - Test (2)
	Benzo(b)fluoranthene	mg/kg	0.3047	0.2434 (NP)	2.8	0.2434	99% UCL - NP	W - Test (2)
	Benzo(g,h,i)perylene	mg/kg	0.1661	0.2434 (G)	1.2	0.2434	95% UCL - G	AD/KS - Test
	Benzo(k)fluoranthene	mg/kg	0.2813	1.478 (NP)	3	1.478	99% UCL - NP	W - Test (2)
	Chrysene	mg/kg	0.3391	1.729 (NP)	3.5	1.729	99% UCL - NP	W - Test (2)
	Dibenz(a,h)anthracene	mg/kg	0.05506	0.2725 (NP)	0.55	0.2725	99% UCL - NP	W - Test (2)
	Indeno(1,2,3-cd)pyrene	mg/kg	0.1933	0.863 (NP)	1.7	0.863	99% UCL - NP	W - Test (2)
	Napthalene	mg/kg	0.3019	1.642 (NP)	2.8	1.64	99% UCL - KMC	W - Test (2)
	Gamma-BHC (Lindane)	mg/kg	2.76	N/A	34	34	Maximum	Less than 5 detects
	Arsenic	mg/kg	11.8	18.46 (NP)	113	18.46	95% UCL - NP	W - Test (2)
	Barium	mg/kg	283.4	462.1 (NP)	2870	462.1	95% UCL - NP	W - Test (2)
	Cadmium	mg/kg	44.2	100 (NP)	840	100	95% UCL - KMC	W - Test (1)
	Cobalt	mg/kg	14.01	19.87 (NP)	111	19.87	95% UCL - NP	W - Test (2)
	Copper	mg/kg	249.6	721.8 (NP)	6030	721.8	97.5% UCL - NP	W - Test (2)
	Iron	mg/kg	25840	27316 (N)	74400	27316	95% UCL - MT	W - Test (2)
	Lead	mg/kg	317.8	1307 (NP)	12900	317.8	Mean	See note [b]
	Manganese	mg/kg	768.3	827.2 (N)	2810	827.2	95% UCL - MT	W - Test (2)
	Mercury	mg/kg	1.096	2.68 (NP)	32.1	2.68	95% UCL - KMC	W - Test (2)
	Zinc	mg/kg	5368	7250 (LN)	65100	7250	95% UCL - H	W - Test (1)

Notes:

The same Exposure Point Concentration will be used for both Reasonable Maximum Exposure and Central Tendency Exposure scenarios.

When available PAHs analytical data of EPA Methods 8270 and 8270-SIM for were combined for stastical calculations.

mg/kg = milligrams per kilogram

(1) Arithmetic mean is based on detected values only.

(2) Upper Confidence Level (UCL) calculations were performed using ProUCL version 4.00.04 (February 2009), developed by Lockheed-Martin for USEPA.
NP = Non-parametric; LN = Lognormal; N = Normal; G = Gamma.

(3) Exposure Point Concentration calculation statistics detailed below.
95% UCL - MT = Calculated using 95% Modified t normal distribution-based procedures.
95% UCL - T = Calculated using 95% Student's t normal distribution-based procedures.
95% UCL - G = Calculated using 95% approximate gamma UCL non-parametric procedures
95% UCL - H = Calculated using 95% H-UCL lognormal distribution procedures
95% UCL - KMC = Calculated using 95% Kaplan Meier Chebyshev non-parametric procedures
99% UCL - KMC = Calculated using 99% Kaplan Meier Chebyshev non-parametric procedures
95% UCL - NP = Calculated using 95% Chebyshev (Mean, Std) non-parametric procedures
97.5% UCL - NP = Calculated using 97.5% Chebyshev (Mean, Std) non-parametric procedures
99% UCL - NP = Calculated using 99% Chebyshev (Mean, Std) non-parametric procedures
Mean = Arithmetic Mean.
Maximum = Maximum detected value.

(4) Shapiro-Wilk W Test used to test the normality or lognormality of the data distribution. Anderson-Darling and Kolmogorov-Smirnov Test statistics used for gamma distributions.
W - Test (1) = Shapiro-Wilk W Test indicates data are either normally or log-normally distributed.
W - Test (2) = Shapiro-Wilk W Test indicates data are neither normally or log-normally distributed.
AD/KS - Test = Anderson-Darling and Kolmogorov-Smirnov Test indicates data follow approximate gamma distribution

[a] Refer to Appendix B, Table B-2 for a list of samples included in this exposure area.

[b] Because there is no toxicity value for lead, this constituent will be evaluated with the use of USEPA lead models. The EPC used in these lead models will be the arithmetic mean.

Table 3.17
Exposure Point Concentration Summary
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Surface and Subsurface Sediment
Exposure Area: Sediment Area 1A [a]
Receptor: Village Park Maintenance Worker
Receptor Age: Adult

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	95% UCL (Distribution) (2)	Maximum Concentration	Exposure Point Concentration		
						Value	Statistic (3)	Rationale (4)
Surface and Subsurface Sediment	Benzo(a)anthracene	mg/kg	0.6594	3.798 (G)	4	3.798	95% UCL - AG	AD/KS - Test
	Benzo(a)pyrene	mg/kg	0.5767	3.276 (G)	3.4	3.276	95% UCL - AG	AD/KS - Test
	Benzo(b)fluoranthene	mg/kg	0.4939	2.629 (G)	2.8	2.629	95% UCL - AG	AD/KS - Test
	Benzo(g,h,i)perylene	mg/kg	0.2232	1.117 (G)	1.2	1.117	95% UCL - AG	AD/KS - Test
	Benzo(k)fluoranthene	mg/kg	0.5142	2.849 (G)	3	2.849	95% UCL - AG	AD/KS - Test
	Chrysene	mg/kg	0.6099	3.271 (G)	3.5	3.271	95% UCL - AG	AD/KS - Test
	Dibenz(a,h)anthracene	mg/kg	0.0933	0.5211 (G)	0.55	0.5211	95% UCL - AG	AD/KS - Test
	Indeno(1,2,3-cd)pyrene	mg/kg	0.296	1.579 (G)	1.7	1.579	95% UCL - AG	AD/KS - Test
	Napthalene	mg/kg	0.314	2.897 (NP)	2.1	2.897	99% UCL - KMC	W - Test (1)
	Arsenic	mg/kg	11.71	14.21 (G)	26.85	14.21	95% UCL - G	AD/KS - Test
	Barium	mg/kg	382.9	547.3 (G)	1380	547.3	95% UCL - G	AD/KS - Test
	Cadmium	mg/kg	40.41	79.03 (NP)	136	79.03	95% UCL - KMC	AD/KS - Test
	Iron	mg/kg	19523	22787 (N)	36100	22787	95% UCL - T	W-Test (1)
	Lead	mg/kg	237.2	363.3 (G)	1200	237.2	Mean	See note [b]
	Manganese	mg/kg	533.2	651.6 (N)	1030	651.6	95% UCL - T	W-Test (1)
	Zinc	mg/kg	3592	4632 (N)	8240	4632	95% UCL - T	W-Test (1)

Notes:

The same Exposure Point Concentration will be used for both Reasonable Maximum Exposure and Central Tendency Exposure scenarios.

When available PAHs analytical data of EPA Methods 8270 and 8270-SIM for were combined for for stastical calculations.

mg/kg = milligrams per kilogram

(1) Arithmetic mean is based on detected values only.

(2) Upper Confidence Level (UCL) calculations were performed using ProUCL version 4.00.04 (February 2009), developed by Lockheed-Martin for USEPA.
NP = Non-parametric; LN = Lognormal; N = Normal; G = Gamma.

(3) Exposure Point Concentration calculation statistics detailed below:
95% UCL - G = Calculated using 95% Approximate Gamma UCL non-parametric procedures.
95% UCL - AG = Calculated using 95% Adjusted Gamma UCL non-parametric procedures.
95% UCL - T = Calculated using 95% Student's t normal distribution-based procedures.
95% UCL - KMC = Calculated using 95% Kaplan-Meier Chebyshev non-parametric procedures.
95% UCL - KMBCA = Calculated using 95% Kaplan Meier Bias-Corrected Accelerated Bootstrap non-parametric procedures
97.5% UCL - KMC = Calculated using 97.5% Kaplan-Meier Chebyshev non-parametric procedures.
Mean = Arithmetic Mean.

(4) Shapiro-Wilk W Test used to test the normality or lognormality of the data distribution. Anderson-Darling and Kolmogorov-Smirnov Test statistics used for gamma distributions.
W - Test (1) = Shapiro-Wilk W Test indicates data are either normally or log-normally distributed.
AD/KS - Test = Anderson-Darling and Kolmogorov-Smirnov Test indicates data follow approximate gamma distribution

[a] Refer to Appendix B, Table B-2 for a list of samples included in this exposure area.

[b] Because there is no toxicity value for lead, this constituent will be evaluated with the use of USEPA lead models. The EPC used in these lead models will be the arithmetic mean.

Table 3.18
Exposure Point Concentration Summary
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Surface and Subsurface Sediment
Exposure Area: Sediment Area 1B[a]
Receptor: Utility Maintenance Worker
Receptor Age: Adult

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	95% UCL (Distribution) (2)	Maximum Concentration	Exposure Point Concentration		
						Value	Statistic (3)	Rationale (4, 5)
Surface and Subsurface Sediment	Benzo(a)anthracene	mg/kg	0.39	N/A	0.39	0.39	Maximum	Less than 8 samples
	Benzo(a)pyrene	mg/kg	0.17	N/A	0.17	0.17	Maximum	Less than 8 samples
	Benzo(b)fluoranthene	mg/kg	0.3	N/A	0.3	0.3	Maximum	Less than 8 samples
	Benzo(k)fluoranthene	mg/kg	0.16	N/A	0.16	0.16	Maximum	Less than 8 samples
	Chrysene	mg/kg	0.56	N/A	0.56	0.56	Maximum	Less than 8 samples
	Dibenz(a,h)anthracene	mg/kg	0.028	N/A	0.028	0.028	Maximum	Less than 8 samples
	Indeno(1,2,3-cd)pyrene	mg/kg	0.048	N/A	0.048	0.048	Maximum	Less than 8 samples
	Napthalene	mg/kg	2.8	N/A	2.8	2.8	Maximum	Less than 8 samples
	Arsenic	mg/kg	41.42	62.74 (N)	113	62.74	95% UCL - T	W - Test (1)
	Barium	mg/kg	1437	2143 (N)	3270	2143	95% UCL - T	W - Test (1)
	Cadmium	mg/kg	474.9	632.3 (NP)	849	632.3	95% UCL - HB	W - Test (2)
	Cobalt	mg/kg	48.47	125.8 (G)	226	125.8	95% UCL - G	AD/KS - Test
	Copper	mg/kg	1748	7777 (G)	6300	7777	95% UCL - AG	AD/KS - Test
	Iron	mg/kg	43822	57814 (N)	75500	57814	95% UCL - H	W - Test (1)
	Lead	mg/kg	3168	13837 (G)	12900	3168	Mean	See note [b]
	Manganese	mg/kg	1548	3508 (NP)	4700	3508	95% UCL - NP	W - Test (2)
	Mercury	mg/kg	8.043	22.23 (G)	32.1	22.23	95% UCL - KMC	AD/KS - Test
	Zinc	mg/kg	24752	39453 (N)	65100	39453	95% UCL - H	W - Test (1)

Notes:

The same Exposure Point Concentration will be used for both Reasonable Maximum Exposure and Central Tendency Exposure scenarios.

mg/kg = milligrams per kilogram

N/A = Not applicable

(1) Arithmetic mean is based on detected values only.

(2) Upper Confidence Level (UCL) calculations were performed using ProUCL version 4.00.04 (February 2009), developed by Lockheed-Martin for USEPA.
NP = Non-parametric; LN = Lognormal; N = Normal; G = Gamma.

(3) Exposure Point Concentration calculation statistics detailed below:
95% UCL - G = Calculated using 95% Approximate Gamma UCL non-parametric procedures.
95% UCL - AG = Calculated using 95% Adjusted Gamma UCL non-parametric procedures.
95% UCL – H = Calculated using 95% H-UCL lognormal distribution procedures
95% UCL - HB = Calculated using 95% Hall's Bootstrap UCL non-parametric procedures.
95% UCL – KMC = Calculated using 95% Kaplan Meier Chebyshev non-parametric procedures
95% UCL - NP = Calculated using 99% Chebyshev (Mean, Std) non-parametric procedures.
95% UCL - T = Calculated using 95% Student's t normal distribution-based procedures.
Mean = Arithmetic Mean.
Maximum = Maximum detected value.

(4) Shapiro-Wilk W Test used to test the normality or lognormality of the data distribution. Anderson-Darling and Kolmogorov-Smirnov Test statistics used for gamma distributions.
W - Test (1) = Shapiro-Wilk W Test indicates data are either normally or log-normally distributed.
W - Test (2) = Shapiro-Wilk W Test indicates data are neither normally or log-normally distributed.
AD/KS - Test = Anderson-Darling and Kolmogorov-Smirnov Test indicates data follow approximate gamma distribution

(5) Based on USEPA guidance (EPA/600/R-07/038 ProUCL Version 4.00.04 User Guide, February 2009), a UCL is not recommended to be calculated for sample sizes less than 8 observations, or less than 5 detected observations. The maximum detected concentration is the default value.

[a] Refer to Appendix B, Table B-2 for a list of samples included in this exposure area.

[b] Because there is no toxicity value for lead, this constituent will be evaluated with the use of USEPA lead models. The EPC used in these lead models will be the arithmetic mean.

Table 3.19
Exposure Point Concentration Summary
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Surface and Subsurface Sediment
Exposure Area: Sediment Area 2 [a]
Receptor: Wildlife Workers and Hunters
Receptor Age: Adult

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	95% UCL (Distribution) (2)	Maximum Concentration	Exposure Point Concentration		
						Value	Statistic (3)	Rationale (4, 5)
Surface and Subsurface Sediment	Benzo(a)anthracene	mg/kg	0.1377	0.1736 (N)	0.26	0.1736	95% UCL - T	W - Test (1)
	Benzo(a)pyrene	mg/kg	0.1737	0.2221 (N)	0.32	0.2221	95% UCL - T	W - Test (1)
	Benzo(b)fluoranthene	mg/kg	0.2235	0.3367 (G)	0.65	0.3367	95% UCL - G	AD/KS - Test
	Benzo(g,h,i)perylene	mg/kg	0.1515	0.1945 (N)	0.28	0.1945	95% UCL - T	W - Test (1)
	Benzo(k)fluoranthene	mg/kg	0.1917	0.2648 (N)	0.51	0.2648	95% UCL - T	W - Test (1)
	Chrysene	mg/kg	0.1981	0.2488 (N)	0.37	0.2488	95% UCL - T	W - Test (1)
	Dibenz(a,h)anthracene	mg/kg	0.04055	0.05155 (N)	0.074	0.05155	95% UCL - T	W - Test (1)
	Indeno(1,2,3-cd)pyrene	mg/kg	0.1586	0.204 (N)	0.29	0.204	95% UCL - T	W - Test (1)
	Arsenic	mg/kg	8.69	9.063 (N)	17.3	9.063	95% UCL - T	W - Test (1)
	Barium	mg/kg	238.4	341.6 (NP)	1730	341.6	95% UCL - NP	W - Test (2)
	Iron	mg/kg	26360	27095 (N)	35700	27095	95% UCL - T	W - Test (2)
	Manganese	mg/kg	656.2	679.8 (N)	1010	679.8	95% UCL - T	W - Test (1)
	Zinc	mg/kg	1531	1710 (G)	7690	1710	95% UCL - G	AD/KS - Test

Notes:

The same Exposure Point Concentration will be used for both Reasonable Maximum Exposure and Central Tendency Exposure scenarios.

mg/kg = milligrams per kilogram

(1) Arithmetic mean is based on detected values only.

(2) Upper Confidence Level (UCL) calculations were performed using ProUCL version 4.00.04 (February 2009), developed by Lockheed-Martin for USEPA.
NP = Non-parametric; LN = Lognormal; N = Normal; G = Gamma.

(3) Exposure Point Concentration calculation statistics detailed below:
95% UCL - G = Calculated using 95% approximate gamma UCL non-parametric procedures
95% UCL - NP = Calculated using 99% Chebyshev (Mean, Std) non-parametric procedures.
95% UCL - T = Calculated using 95% Student's t normal distribution-based procedures.

(4) Shapiro-Wilk W Test used to test the normality or lognormality of the data distribution. Anderson-Darling and Kolmogorov-Smirnov Test statistics used for gamma distributions.
W - Test (1) = Shapiro-Wilk W Test indicates data are either normally or log-normally distributed.
AD/KS - Test = Anderson-Darling and Kolmogorov-Smirnov Test indicates data follow approximate gamma distribution

(5) Based on USEPA guidance (EPA/600/R-07/038 ProUCL Version 4.00.04 User Guide, February 2009), a UCL is not recommended to be calculated for sample sizes less than 8 observations, or less than 5 detected observations. The maximum detected concentration is the default value.

[a] Refer to Appendix B, Table B-2 for a list of samples included in this exposure area.

Table 3.20
Exposure Point Concentration Summary
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Seep Sediment
Exposure Area: Floodplain Area 1A [a]
Receptor: Village Park Recreational User, Boater, Boat Angler, Shoreline Angler, and Village Park Maintenance Worker
Receptor Age: Adult and Child (maintenance worker = adult only)

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	95% UCL (Distribution)	Maximum Concentration	Exposure Point Concentration		
						Value	Statistic (2)	Rationale (3)
Seep Sediment	Arsenic	mg/kg	5.9	N/A	9.6	9.6	Maximum	Less than 5 detects

Notes:

The same Exposure Point Concentration will be used for both Reasonable Maximum Exposure and Central Tendency Exposure scenarios.

mg/kg = milligrams per kilogram

N/A = Not applicable

(1) Arithmetic mean is based on detected values only.

(2) Maximum = Maximum detected value.

(3) Based on USEPA guidance (EPA/600/R-07/038 ProUCL Version 4.00.04 User Guide, February 2009), a UCL is not recommended to be calculated for sample sizes less than 8 observations, or less than 5 detected observations. The maximum detected concentration is the default value.

[a] Refer to Appendix B, Table B-3 for a list of samples included in this exposure area.

Table 3.21
Exposure Point Concentration Summary
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Seep Sediment
Exposure Area: Floodplain Area 1B [a]
Receptor: Trespasser, Utility Maintenance Worker
Receptor Age: Adolescent (trespasser), Adult (utility maintenance worker)

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	95% UCL (Distribution)	Maximum Concentration	Exposure Point Concentration		
						Value	Statistic (2)	Rationale (3)
Seep Sediment	Arsenic	mg/kg	13.2	N/A	45.5	45.5	Maximum	Less than 8 samples
	Cadmium	mg/kg	277	N/A	1420	1420	Maximum	Less than 8 samples
	Lead	mg/kg	316	N/A	711	316	Mean	See note [b]
	Manganese	mg/kg	375	N/A	878	878	Maximum	Less than 8 samples
	Zinc	mg/kg	18700	N/A	95600	95600	Maximum	Less than 8 samples

Notes:

The same Exposure Point Concentration will be used for both Reasonable Maximum Exposure and Central Tendency Exposure scenarios.

mg/kg = milligrams per kilogram

N/A = Not applicable

(1) Arithmetic mean is based on detected values only.

(2) Mean = Arithmetic Mean.
Maximum = Maximum detected value.

(3) Based on USEPA guidance (EPA/600/R-07/038 ProUCL Version 4.00.04 User Guide, February 2009), a UCL is not recommended to be calculated for sample sizes less than 8 observations, or less than 5 detected observations. The maximum detected concentration is the default value.

[a] Refer to Appendix B, Table B-3 for a list of samples included in this exposure area.

[b] Because there is no toxicity value for lead, this constituent will be evaluated with the use of USEPA lead models. The EPC used in these lead models will be the arithmetic mean.

Table 3.22
Exposure Point Concentration Summary
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Seep Sediment
Exposure Area: Floodplain Area 1C [a]
Receptor: Trespasser
Receptor Age: Adolescent

Exposure Point	Chemical of Potential Concern	Units	No. of Detections	Arithmetic Mean	95% UCL (Distribution)	Maximum Concentration	Exposure Point Concentration		
							Value	Statistic	Rationale
Seep Sediment	None	--	--	--	--	--	--	--	--

Notes:

No Chemicals of Potential Concern were identified for this exposure medium within Floodplain Area 1C (See Table 2.22).

[a] Refer to Appendix B, Table B-3 for a list of samples included in this exposure area.

Table 3.23
Exposure Point Concentration Summary
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Surface Water
Exposure Area: Lake-wide [a]
Receptor: Boater, Boat Angler, and Wildlife Workers and Hunters
Receptor Age: Adult and Child (workers and hunters = adult only)

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	95% UCL (Distribution) (2)	Maximum Concentration	Value	Statistic (3)	Rationale (4)
Surface Water	Cadmium	mg/L	0.00322	0.00349 (NP)	0.0072	0.00349	95% UCL - KMPB	AD/KS - Test
	Lead	mg/L	0.0169	0.0323 (NP)	0.0724	0.0169	Mean	See note [b]
	Manganese	mg/L	0.355	0.478 (G)	1.44	0.478	95% UCL - G	AD/KS - Test
	Manganese (filtered)	mg/L	0.143	0.253 (LN)	1.4	0.253	95% UCL - CMVUE	W - Test (1)
	Ammonia	mg/L	2.541	22.31 (NP)	36.2	22.31	99% UCL - CMVUE	W - Test (2)
	Chloride	mg/L	88.26	117.1 (N)	341	117.1	95% UCL - MT	W - Test (2)
	Nitrate as N	mg/L	2.081	7.388 (NP)	17	7.388	97.5% UCL - KMC	W - Test (2)
	Phosphorus, Total	mg/L	1.481	1.23 (NP)	3.48	1.23	95% UCL - KMT	AD/KS - Test
	Sulfate	mg/L	149.3	325 (NP)	800	325	95% UCL - NP	W - Test (2)

Notes:

The same Exposure Point Concentration will be used for both Reasonable Maximum Exposure and Central Tendency Exposure scenarios.

mg/L = milligrams per liter

(1) Arithmetic mean is based on detected values only.

(2) Upper Confidence Level (UCL) calculations were performed using ProUCL version 4.00.04 (February 2009), developed by Lockheed-Martin for USEPA.
NP = Non-parametric; LN = Lognormal; N = Normal; G = Gamma.

(3) Exposure Point Concentration calculation statistics detailed below:
95% UCL - MT = Calculated using 95% Modified t normal distribution-based procedures.
95% UCL - G = Calculated using 95% Approximate Gamma UCL non-parametric procedures.
95% UCL - KMPB = Calculated using 95% Kaplan-Meier percentile bootstrap nonparametric-based procedures.
95% UCL - KMT = Calculated using 95% Kaplan-Meier Student's t non-parametric procedures.
95% UCL - CMVUE = Calculated using 95% Chebyshev lognormal distribution procedures.
95% UCL - NP = Calculated using 95% Chebyshev (Mean, Std) non-parametric procedures.
97.5% UCL - KMC = Calculated using 97.5% Kaplan-Meier Chebyshev non-parametric procedures.
99% UCL - CMVUE = Calculated using 99% Chebyshev lognormal distribution procedures
Mean = Arithmetic Mean.

(4) Shapiro-Wilk W Test used to test the normality or lognormality of the data distribution. Anderson-Darling and Kolmogorov-Smirnov Test statistics used for gamma distributions.
W - Test (1) = Shapiro-Wilk W Test indicates data are either normally or log-normally distributed.
W - Test (2) = Shapiro-Wilk W Test indicates data are neither normally or log-normally distributed.
AD/KS - Test = Anderson-Darling and Kolmogorov-Smirnov Test indicates data follow approximate gamma distribution

[a] Refer to Appendix B, Table B-4 for a list of samples included in this exposure area.

[b] Because there is no toxicity value for lead, this constituent will be evaluated with the use of USEPA lead models. The EPC used in these lead models will be the arithmetic mean.

Table 3.23A
Exposure Point Concentration Summary
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Surface Water
Exposure Area: Eastern portion of DePue Lake [a]
Receptor: Village Park Recreational User, Shoreline Angler, Village Park Maintenance Worker, Utility Maintenance Worker
Receptor Age: Adult and Child (workers = adult only)

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	95% UCL (Distribution) (2)	Maximum Concentration	Exposure Point Concentration		
						Value	Statistic (3)	Rationale (4, 5)
Surface Water	Cadmium	mg/L	0.00266	0.00348 (NP)	0.0056	0.00349	95% UCL - KMT	AD/KS - Test
	Lead	mg/L	0.0212	0.0467 (NP)	0.0724	0.02	Mean	See note [b]
	Manganese	mg/L	0.295	0.376 (N)	0.475	0.376	95% UCL - T	W - Test (1)
	Ammonia	mg/L	0.499	0.728 (G)	0.905	0.728	95% UCL - G	AD/KS - Test
	Chloride	mg/L	104.3	157.2 (N)	341	157.2	95% UCL - MT	W - Test (1)
	Nitrate as N	mg/L	3.331	12.83 (NP)	17	12.83	97.5% UCL - KMC	W - Test (2)
	Phosphorus, Total	mg/L	1.62	N/A	2.67	2.67	Maximum	Less than 5 detects

Notes:

The same Exposure Point Concentration will be used for both Reasonable Maximum Exposure and Central Tendency Exposure scenarios.

mg/L = milligrams per liter

N/A = Not applicable

(1) Arithmetic mean is based on detected values only.

(2) Upper Confidence Level (UCL) calculations were performed using ProUCL version 4.00.04 (February 2009), developed by Lockheed-Martin for USEPA.
NP = Non-parametric; LN = Lognormal; N = Normal; G = Gamma.

(3) Exposure Point Concentration calculation statistics detailed below:
95% UCL - MT = Calculated using 95% Modified t normal distribution-based procedures.
95% UCL - T = Calculated using 95% Student's t normal distribution-based procedures.
95% UCL - G = Calculated using 95% Approximate Gamma UCL non-parametric procedures.
95% UCL - KMT = Calculated using 95% Kaplan-Meier Student's t non-parametric procedures.
97.5% UCL - KMC = Calculated using 95% Kaplan-Meier Chebyshev non-parametric procedures.
Mean = Arithmetic Mean.
Maximum = Maximum detected concentration.

(4) Shapiro-Wilk W Test used to test the normality or lognormality of the data distribution. Anderson-Darling and Kolmogorov-Smirnov Test statistics used for gamma distributions.
W - Test (1) = Shapiro-Wilk W Test indicates data are either normally or log-normally distributed.
W - Test (2) = Shapiro-Wilk W Test indicates data are neither normally or log-normally distributed.
AD/KS - Test = Anderson-Darling and Kolmogorov-Smirnov Test indicates data follow approximate gamma distribution

(5) Based on USEPA guidance (EPA/600/R-07/038 ProUCL Version 4.00.04 User Guide, February 2009), a UCL is not recommended to be calculated for sample sizes less than 8 observations, or less than 5 detected observations. The maximum detected concentration is the default value.

[a] Refer to Appendix B, Table B-4 for a list of samples included in this exposure area.

[b] Because there is no toxicity value for lead, this constituent will be evaluated with the use of USEPA lead models. The EPC used in these lead models will be the arithmetic mean.

Table 3.24
Exposure Point Concentration Summary
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Seep Surface Water
Exposure Area: Floodplain Area 1A [a]
Receptor: Village Park Recreational User, Boater, Boat Angler, Shoreline Angler, and Village Park Maintenance Worker
Receptor Age: Adult and Child (maintenance worker = adult only)

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	95% UCL (Distribution)	Maximum Concentration	Exposure Point Concentration		
						Value	Statistic (2)	Rationale (3)
Seep Surface Water	Manganese	mg/L	0.221	N/A	0.401	0.401	Maximum	Less than 5 detects
	Manganese (filtered)	mg/L	0.325	N/A	0.402	0.402	Maximum	Less than 5 detects
	Ammonia	mg/L	0.411	N/A	0.51	0.51	Maximum	Less than 5 detects

Notes:
The same Exposure Point Concentration will be used for both Reasonable Maximum Exposure and Central Tendency Exposure scenarios.
mg/L = milligrams per liter
N/A = Not applicable
(1) Arithmetic mean is based on detected values only.
(2) Maximum = Maximum detected value.
(3) Based on USEPA guidance (EPA/600/R-07/038 ProUCL Version 4.00.04 User Guide, February 2009), a UCL is not recommended to be calculated for sample sizes less than 8 observations, or less than 5 detected observations. The maximum detected concentration is the default value.
[a] Refer to Appendix B, Table B-3 for a list of samples included in this exposure area.

Table 3.25
Exposure Point Concentration Summary
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Seep Surface Water
Exposure Area: Floodplain Area 1B [a]
Receptor: Trespasser and Utility Maintenance Worker
Receptor Age: Adolescent (trespasser), Adult (worker)

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	95% UCL (Distribution)	Maximum Concentration	Exposure Point Concentration		
						Value	Statistic (2)	Rationale (3)
Seep Surface Water	Cadmium	mg/L	0.00367	N/A	0.011	0.011	Maximum	Less than 5 detects
	Lead	mg/L	0.0147	N/A	0.0258	0.0147	Mean	See note [b]
	Manganese	mg/L	0.254	N/A	0.402	0.402	Maximum	Less than 5 detects
	Manganese (filtered)	mg/L	0.212	N/A	0.378	0.378	Maximum	Less than 5 detects
	Ammonia	mg/L	0.372	N/A	0.678	0.678	Maximum	Less than 5 detects
	Phosporus, total	mg/L	3.73	N/A	3.73	3.73	Maximum	Less than 5 detects

Notes:

The same Exposure Point Concentration will be used for both Reasonable Maximum Exposure and Central Tendency Exposure scenarios.

mg/L = milligrams per liter

N/A = Not applicable

(1) Arithmetic mean is based on detected values only.

(2) Mean = Arithmetic Mean.
Maximum = Maximum detected value.

(3) Based on USEPA guidance (EPA/600/R-07/038 ProUCL Version 4.00.04 User Guide, February 2009), a UCL is not recommended to be calculated for sample sizes less than 8 observations, or less than 5 detected observations. The maximum detected concentration is the default value.

[a] Refer to Appendix B, Table B-3 for a list of samples included in this exposure area.

[b] Because there is no toxicity value for lead, this constituent will be evaluated with the use of USEPA lead models. The EPC used in these lead models will be the arithmetic mean.

Table 3.26
Exposure Point Concentration Summary
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Seep Surface Water
Exposure Area: Floodplain Area 1C [a]
Receptor: Trespasser
Receptor Age: Adolescent

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	95% UCL (Distribution) (2)	Maximum Concentration	Exposure Point Concentration		
						Value	Statistic (3)	Rationale (4, 5)
Seep Surface Water	Iron	mg/L	5.95	N/A	15.3	15.3	Maximum	Less than 8 samples
	Lead	mg/L	0.009	N/A	0.0171	0.0171	Mean	See note [b]
	Manganese	mg/L	0.965	N/A	1.47	1.47	Maximum	Less than 8 samples
	Ammonia	mg/L	45.6	N/A	88.5	66.44	Maximum	Less than 8 samples
	Phosphorus	mg/L	9.2	N/A	28.9	23.57	Maximum	Less than 8 samples

Notes:

The same Exposure Point Concentration will be used for both Reasonable Maximum Exposure and Central Tendency Exposure scenarios.

mg/L = milligrams per liter

N/A = Not applicable

(1) Arithmetic mean is based on detected values only.

(2) Upper Confidence Level (UCL) calculations were performed using ProUCL version 4.00.04 (February 2009), developed by Lockheed-Martin for USEPA.
NP = Non-parametric; LN = Lognormal; N = Normal; G = Gamma.

(3) Exposure Point Concentration calculation statistics detailed below:
95% UCL - T = Calculated using 95% Student's t normal distribution-based procedures.
95% UCL - KMC = Calculated using 95% Kaplan-Meier Chebyshev non-parametric procedures.
Mean = Arithmetic Mean.

(4) Shapiro-Wilk W Test used to test the normality or lognormality of the data distribution. Anderson-Darling and Kolmogorov-Smirnov Test statistics used for gamma distributions.
W - Test (1) = Shapiro-Wilk W Test indicates data are either normally or log-normally distributed.
W - Test (2) = Shapiro-Wilk W Test indicates data are neither normally or log-normally distributed.

(5) Based on USEPA guidance (EPA/600/R-07/038 ProUCL Version 4.00.04 User Guide, February 2009), a UCL is not recommended to be calculated for sample sizes less than 8 observations, or less than 5 detected observations. The maximum detected concentration is the default value.

[a] Refer to Appendix B, Table B-3 for a list of samples included in this exposure area.

[b] Because there is no toxicity value for lead, this constituent will be evaluated with the use of USEPA lead models. The EPC used in these lead models will be the arithmetic mean.

Table 3.27
Exposure Point Concentration Summary
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Fish Fillet
Exposure Area: Lake-wide (fillet samples only)
Receptor: Boat Angler, Shoreline Angler
Receptor Age: Adult and Child

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	95% UCL (Distribution) (2)	Maximum Concentration	Exposure Point Concentration		
						Value	Statistic (3)	Rationale (4, 5)
Fish Fillet	Lead	mg/kg	0.179	0.196 (NP)	0.215	0.196	95% UCL - KMT	W - Test (1)

Notes:

The same Exposure Point Concentration will be used for both Reasonable Maximum Exposure and Central Tendency Exposure scenarios.

mg/kg = milligrams per kilogram

(1) Arithmetic mean is based on detected values only.

(2) Upper Confidence Level (UCL) calculations were performed using ProUCL version 4.00.04 (February 2009), developed by Lockheed-Martin for USEPA.
NP = Non-parametric; LN = Lognormal; N = Normal; G = Gamma.

(3) Exposure Point Concentration calculation statistics detailed below:
95% UCL - KMT = Calculated using 95% Kaplan-Meier Student's t non-parametric procedures.

(4) Shapiro-Wilk W Test used to test the normality or lognormality of the data distribution. Anderson-Darling and Kolmogorov-Smirnov Test statistics used for gamma distributions.
W - Test (1) = Shapiro-Wilk W Test indicates data are either normally or log-normally distributed.

Table 4.1
Summary of Exposure Factors - Floodplain Soil [(1)]
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Exposure Factors	Units	Trespasser (Adolescent)	Farmer (Adult)	Wildlife Worker and Hunter (Adult)	Utility Maintenance Worker (Adult)
Reasonable Maximum Exposure					
Cancer Slope Factor, oral (CSFo)	$(mg/kg\text{-}day)^{-1}$	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Reference Dose, oral (RfDo)	mg/kg-day	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Cancer Slope Factor, dermal (CSFd)	$(mg/kg\text{-}day)^{-1}$	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Reference Dose, dermal (RfDd)	mg/kg-day	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Inhalation Unit Risk (IUR)	$(mg/m^3)^{-1}$	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Reference Concentration, inhalation (RfC)	mg/m^3	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Exposure Point Concentration (EPC)	mg/kg	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Body Weight (BW)	kg	45 (g)	70 (a)	70 (a)	70 (a)
Soil Ingestion Rate (IR)	mg/day	100 (a,d)	100 (a,d)	100 (d)	330 (d)
Breathing Rate (BR)	m^3/hour	--	1.5 (n)	--	--
Exposed Surface Area (SA)	cm^2/day	5,700 (b,d,v)	3,300 (b,d,w)	3,300 (b,w)	3,300 (b,w)
Adherence Factor (AF)	mg/cm^2	0.07 (b,d,y)	0.4 (b,z)	0.2 (b,d,x)	0.3 (b,d,aa)
Absorption Fraction (ABS)	unitless	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Relative Bioavailability Adjustment (RBA)	unitless	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Exposure Frequency (EF)	days/year	56 (c,e)	56 (c,j)	75 (c,q)	10 (c)
Exposure Duration (ED)	years	12 (a)	25 (b,d)	25 (b,d)	25 (b,d)
Exposure Time (ET)	hours/day	--	8 (m)	--	--
Fraction Ingested from Site (FI)	unitless	0.5 (a,t)	1 (a,t)	0.5 (a,t)	0.5 (a,t)
Conversion Factor (CF)	kg/mg	1.0E-06 (a)	1.0E-06 (a)	1.0E-06 (a)	1.0E-06 (a)
Particulate Emission Factor (PEF)	m^3/kg	--	1.24E+08 (h)	--	--
Averaging Time (Cancer) (ATc)	days	25,550 (a)	25,550 (a)	25,550 (a)	25,550 (a)
Averaging Time (Non-Cancer) (ATnc)	days	4,380 (a)	9,125 (a)	9,125 (a)	9,125 (a)
Central Tendency Exposure					
Cancer Slope Factor, oral (CSFo)	$(mg/kg\text{-}day)^{-1}$	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Reference Dose, oral (RfDo)	mg/kg-day	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Cancer Slope Factor, dermal (CSFd)	$(mg/kg\text{-}day)^{-1}$	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Reference Dose, dermal (RfDd)	mg/kg-day	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Inhalation Unit Risk (IUR)	$(mg/m^3)^{-1}$	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Reference Concentration, inhalation (RfC)	mg/m^3	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Exposure Point Concentration (EPC)	mg/kg	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Body Weight (BW)	kg	45 (g)	70 (a)	70 (a)	70 (a)
Soil Ingestion Rate (IR)	mg/day	50 (g)	50 (g)	100 (d)	100 (d)
Breathing Rate (BR)	m^3/hour	--	1.1 (p)	--	--
Exposed Surface Area (SA)	cm^2/day	5,700 (b,d,v)	3,300 (b,d,w)	3,300 (b,w)	3,300 (b,w)
Adherence Factor (AF)	mg/cm^2	0.04 (b,u)	0.1 (b,s)	0.1 (b,i)	0.1 (b,i)
Absorption Fraction (ABS)	unitless	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Relative Bioavailability Adjustment (RBA)	unitless	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Exposure Frequency (EF)	days/year	28 (c,f)	28 (c,k)	53 (c,r)	5 (c)
Exposure Duration (ED)	years	9 (b)	9 (b)	9 (b)	9 (b)
Exposure Time (ET)	hours/day	--	4 (o)	--	--
Fraction Ingested from Site (FI)	unitless	0.5 (l,t)	0.5 (l,t)	0.5 (l,t)	0.5 (l,t)
Conversion Factor (CF)	kg/mg	1.0E-06 (a)	1.0E-06 (a)	1.0E-06 (a)	1.0E-06 (a)
Particulate Emission Factor (PEF)	m^3/kg	--	1.24E+08 (h)	--	--
Averaging Time (Cancer) (ATc)	days	25,550 (a)	25,550 (a)	25,550 (a)	25,550 (a)
Averaging Time (Non-Cancer) (ATnc)	days	3,285 (a)	3,285 (a)	3,285 (a)	3,285 (a)

Table 4.1
Summary of Exposure Factors - Floodplain Soil [1]
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Equations: [a,b,ab]

Cancer Risk = [((CSFo * EPC * CF * EF * ED * IR * FI * RBA)/ (ATc * BW)) + ((CSFd * EPC * EF * ED * SA * AF* ABS * FI * CF)/(ATc * BW))]

Hazard Quotient = [((1/RfDo * EPC * EF * ED * IR * FI * CF * RBA)/ (ATnc * BW)) + ((1/RfDd * EPC * EF * ED * SA * ABS * AF * FI * CF)/(ATnc * BW))]

Inhalation (farmer only):
Cancer Risk = [((IUR * EPC * ET * EF * ED * FI)/ (ATc * 24 hr/day))], where EPC = Soil Concentration * 1/PEF
Hazard Quotient = [((1/RfC * EPC * ET * EF * ED *FI) / (ATnc * 24 hr/day))], where EPC = Soil Concentration * 1/PEF

Notes:
(1) Surface soils data were not collected near the Village Park because this area is technically outside of OU5 (i.e., above 450 ft amsl). Therefore, potential exposure to soil in the vicinity of the Village Park will be evaluated in the HHRA for OU4 (Off-Site Soils).

cm^2/day = square centimeters per day

kg/mg = milligrams per kilogram

m^3/hour = cubic meters per hour

m^3/kg = cubic meters per kilogram

mg/cm^2 = millgrams per square centimeter

mg/day = milligrams per day

mg/kg-day = milligrams per kilogram of body weight per day

Sources:
(a) USEPA (1989) Risk Assessment for Superfund Volume I: Human Health Evaluation Manual (Part A). EPA/540/1-89/002. December 1989.
(b) USEPA (2004) Risk Assessment for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment). EPA/540/R/99/005.
(c) Professional judgment
(d) USEPA (2002) Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9355.4-24. December 2002.
(e) Assumes 2 day per week for 7 months, April - October.
(f) Assumes 1 day per week for 7 months, April - October.
(g) USEPA (1997) Exposure Factors Handbook
(h) Illinois Environmental Protection Agency (IEPA), Title 35: Environmental Protection, Part 742: Tiered Approach to Corrective Action Objectives (TACO).
(i) Represents geometric mean for gardeners.
(j) Assumes 2 days per week for 7 months, April - October, or 8 full weeks of work.
(k) Assumes 1 day per week for 7 months, April - October, or 4 full weeks of work.
(l) Assumes site accounts for half of exposure.
(m) Assumes an 8-hour work day.
(n) USEPA (1997) Exposure Factors Handbook, recommended 50th percentile for outdoor workers, moderate activities.
(o) Assumes a 4-hour work day.
(p) USEPA (1997) Exposure Factors Handbook, recommended 50th percentile for outdoor workers, slow activities.
(q) Exposure frequency represents annual contact as provided by IDNR site manager at DePue/Donnely Wildlife Management Area.
(r) Exposure frequency represents annual contact as provided by IDNR site manager at DePue/Donnely Wildlife Management Area.
(s) Represents geometric mean for farmers.
(t) Although total daily exposure will be calculated assuming that 100% of daily contact is derived from site-related media, the fraction of each exposure represented by soil vs. sediment will be adjusted on a scenario- and receptor-specific basis.
(u) Represents geometric mean for landscaper.
(v) Represents head, hands, forearms, and lower legs. Average of 50th percentile for males and females greater than 18 years of age.
(w) Represents head, hands, and forearms. Average of 50th percentile for males and females greater than 18 years of age.
(x) Represents 95th percentile for landscaper.
(y) Represents geometric mean for gardeners.
(z) Represents 95th percentile for farmers.
(aa) Represents 95th percentile for gardeners.
(ab) USEPA (2009) Risk Assessment for Superfund Volume I: Human Health Evaluation Manual (Part F, Supplemental Guidance for Inhalation Risk Assessment). EPA/540/R/99/005.

Table 4.2
Summary of Exposure Factors - DePue Lake Sediment[1]
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Exposure Factors	Units	Village Park Recreational User [2] (Child)	Village Park Recreational User [2] (Adult)	Boater (Child)	Boater (Adult)	Boat Angler (Child)	Boat Angler (Adult)
Reasonable Maximum Exposure							
Cancer Slope Factor (CSFo)	$(mg/kg\text{-}day)^{-1}$	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Reference Dose (RfDo)	mg/kg-day	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Cancer Slope Factor (CSFd)	$(mg/kg\text{-}day)^{-1}$	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Reference Dose (RfDd)	mg/kg-day	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Exposure Point Concentration (EPC)	mg/kg	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Body Weight (BW)	kg	15 (a)	70 (a)	15 (a)	70 (a)	15 (a)	70 (a)
Sediment Ingestion Rate (IR)	mg/day	200 (a,g)	100 (a,g)	200 (a,g)	100 (a,g)	200 (a,g)	100 (a,g)
Exposed Surface Area (SA)	cm^2/day	2,440 (g,i,t)	5,700 (g,i,u)	2,440 (g,i,t)	5,700 (g,i,u)	2,440 (g,i,t)	5,700 (g,i,u)
Adherence Factor (AF)	mg/cm^2	0.2 (b,w)	0.2 (b,x)	0.2 (b,w)	0.2 (b,x)	0.2 (b,w)	0.2 (b,x)
Absorption Fraction (ABS)	unitless	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Relative Bioavailability Adjustment (RBA)	unitless	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Exposure Frequency (EF)	days/year	56 (c,e)	56 (c,e)	26 (c,p)	26 (c,p)	50 (r)	50 (r)
Exposure Duration (ED)	years	6 (a)	24 (a)	6 (a)	24 (a)	6 (a)	24 (a)
Fraction Ingested from Site Lake Sediment (FI)	unitless	0.2 (a,s)	0.2 (a,s)	0.5 (a,s)	0.5 (a,s)	0.5 (a,s)	0.5 (a,s)
Fraction Ingested from Site Seep Sediment (FI	unitless	0.3 (a,s)	0.3 (a,s)	0.5 (a,s)	0.5 (a,s)	0.5 (a,s)	0.5 (a,s)
Conversion Factor (CF)	kg/mg	1.0E-06 (a)	1.0E-06 (a)	1.0E-06 (a)	1.0E-06 (a)	1.0E-06 (a)	1.0E-06 (a)
Averaging Time (Cancer) (ATc)	days	25,550 (a)	25,550 (a)	25,550 (a)	25,550 (a)	25,550 (a)	25,550 (a)
Averaging Time (Non-Cancer) (ATnc)	days	2,190 (a)	8,760 (a)	2,190 (a)	8,760 (a)	2,190 (a)	8,760 (a)
Central Tendency Exposure							
Cancer Slope Factor (CSFo)	$(mg/kg\text{-}day)^{-1}$	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Reference Dose (RfDo)	mg/kg-day	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Cancer Slope Factor (CSFd)	$(mg/kg\text{-}day)^{-1}$	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Reference Dose (RfDd)	mg/kg-day	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Exposure Point Concentration (EPC)	mg/kg	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Body Weight (BW)	kg	15 (a)	70 (a)	15 (a)	70 (a)	15 (a)	70 (a)
Sediment Ingestion Rate (IR)	mg/day	100 (a,g)	50 (a,g)	100 (a,g)	50 (a,g)	100 (a,g)	50 (a,g)
Exposed Surface Area (SA)	cm^2/day	2,440 (g,i,t)	5,700 (g,i,u)	2,440 (g,i,t)	5,700 (g,i,u)	2,440 (g,i,t)	5,700 (g,i,u)
Adherence Factor (AF)	mg/cm^2	0.04 (b,y)	0.04 (b,z)	0.04 (b,y)	0.04 (b,z)	0.04 (b,y)	0.04 (b,z)
Absorption Fraction (ABS)	unitless	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Relative Bioavailability Adjustment (RBA)	unitless	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Exposure Frequency (EF)	days/year	28 (c,f)	28 (c,f)	13 (c,q)	13 (c,q)	20 (r)	20 (r)
Exposure Duration (ED)	years	6 (a)	9 (a,b)	6 (a,b)	9 (a,b)	6 (a,b)	9 (a,b)
Fraction Ingested from Site Lake Sediment (FI)	unitless	0.2 (a,s)	0.2 (a,s)	0.5 (a,s)	0.5 (a,s)	0.5 (a,s)	0.5 (a,s)
Fraction Ingested from Site Seep Sediment (FI	unitless	0.3 (a,s)	0.3 (a,s)	0.5 (a,s)	0.5 (a,s)	0.5 (a,s)	0.5 (a,s)
Conversion Factor (CF)	kg/mg	1.0E-06 (a)	1.0E-06 (a)	1.0E-06 (a)	1.0E-06 (a)	1.0E-06 (a)	1.0E-06 (a)
Averaging Time (Cancer) (ATc)	days	25,550 (a)	25,550 (a)	25,550 (a)	25,550 (a)	25,550 (a)	25,550 (a)
Averaging Time (Non-Cancer) (ATnc)	days	2,190 (a)	3,285 (a)	2,190 (a)	3,285 (a)	2,190 (a)	3,285 (a)

Table 4.2
Summary of Exposure Factors - DePue Lake Sediment[1]
Baseline Human Health Risk Assessment, Operable Unit 5
Operable Unit 5 (DePue Lake Sediments and Floodplain), DePue, Illinois

Exposure Factors	Units	Shoreline Angler (Child)	Shoreline Angler (Adult)	Trespasser[3] (Adolescent)	Wildlife Worker and Hunter	Village Park Maintenance Worker	Utility Maintenance Worker
Reasonable Maximum Exposure							
Cancer Slope Factor (CSFo)	$(mg/kg\text{-}day)^{-1}$	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Reference Dose (RfDo)	mg/kg-day	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Cancer Slope Factor (CSFd)	$(mg/kg\text{-}day)^{-1}$	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Reference Dose (RfDd)	mg/kg-day	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Exposure Point Concentration (EPC)	mg/kg	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Body Weight (BW)	kg	15 (a)	70 (a)	45 (g)	70 (a)	70 (a)	70 (a)
Sediment Ingestion Rate (IR)	mg/day	200 (a,g)	100 (a,g)	100 (a,g)	100 (a,g)	100 (a,g)	100 (a,g)
Exposed Surface Area (SA)	cm^2/day	2,440 (g,i,t)	5,700 (g,i,u)	5,700 (g,i,u)	2,300 (g,j,v)	2,300 (g,j,v)	2,300 (g,j)
Adherence Factor (AF)	mg/cm^2	0.2 (b,w)	0.2 (b,x)	0.2 (b,x)	0.2 (b,x)	0.2 (b,x)	0.2 (b,x)
Absorption Fraction (ABS)	unitless	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Relative Bioavailability Adjustment (RBA)	unitless	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Exposure Frequency (EF)	days/year	50 (r)	50 (r)	56 (c,e)	75 (c,n)	56 (c,k)	10 (c)
Exposure Duration (ED)	years	6 (a)	24 (a)	12 (a)	25 (b,d)	25 (b,d)	25 (b,d)
Fraction Ingested from Site Lake Sediment (FI)	unitless	0.2 (a,s)	0.2 (a,s)	--	0.5 (a,s)	0.2 (a,s)	0.2 (a,s)
Fraction Ingested from Site Seep Sediment (FI)	unitless	0.3 (a,s)	0.3 (a,s)	0.5 (a,s)	--	0.3 (a,s)	0.3 (a,s)
Conversion Factor (CF)	kg/mg	1.0E-06 (a)	1.0E-06 (a)	1.0E-06 (a)	1.0E-06 (a)	1.0E-06 (a)	1.0E-06 (a)
Averaging Time (Cancer) (ATc)	days	25,550 (a)	25,550 (a)	25,550 (a)	25,550 (a)	25,550 (a)	25,550 (a)
Averaging Time (Non-Cancer) (ATnc)	days	2,190 (a)	8,760 (a)	4,380 (a)	9,125 (a)	9,125 (a)	9,125 (a)
Central Tendency Exposure							
Cancer Slope Factor (CSFo)	$(mg/kg\text{-}day)^{-1}$	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Reference Dose (RfDo)	mg/kg-day	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Cancer Slope Factor (CSFd)	$(mg/kg\text{-}day)^{-1}$	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Reference Dose (RfDd)	mg/kg-day	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Exposure Point Concentration (EPC)	mg/kg	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Body Weight (BW)	kg	15 (a)	70 (a)	45 (g)	70 (a)	70 (a)	70 (a)
Sediment Ingestion Rate (IR)	mg/day	100 (a,g)	50 (a,g)	50 (a,g)	50 (a,g,h)	50 (a,g,h)	50 (a,g,h)
Exposed Surface Area (SA)	cm^2/day	2,440 (g,i,t)	5,700 (g,i,u)	5,700 (g,i,u)	2,300 (g,j,v)	2,300 (g,j,v)	2,300 (g,j,v)
Adherence Factor (AF)	mg/cm^2	0.04 (b,y)	0.04 (b,z)	0.04 (b,z)	0.1 (b,aa)	0.1 (b,aa)	0.1 (b,aa)
Absorption Fraction (ABS)	unitless	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Relative Bioavailability Adjustment (RBA)	unitless	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Exposure Frequency (EF)	days/year	20 (r)	20 (r)	28 (c,f)	53 (c,o)	28 (c,l)	5 (c)
Exposure Duration (ED)	years	6 (a,b)	9 (a,b)	9 (a,b)	9 (a,b)	9 (a,b)	9 (a,b)
Fraction Ingested from Site Lake Sediment (FI)	unitless	0.2 (a,s)	0.2 (a,s)	--	0.5 (a,s)	0.2 (a,s)	0.2 (a,s)
Fraction Ingested from Site Seep Sediment (FI)	unitless	0.3 (a,s)	0.3 (a,s)	0.5 (a,s)	--	0.3 (a,s)	0.3 (a,s)
Conversion Factor (CF)	kg/mg	1.0E-06 (a)	1.0E-06 (a)	1.0E-06 (a)	1.0E-06 (a)	1.0E-06 (a)	1.0E-06 (a)
Averaging Time (Cancer) (ATc)	days	25,550 (a)	25,550 (a)	25,550 (a)	25,550 (a)	25,550 (a)	25,550 (a)
Averaging Time (Non-Cancer) (ATnc)	days	2,190 (a)	3,285 (a)	3,285 (a)	3,285 (a)	3,285 (a)	3,285 (a)

Table 4.2
Summary of Exposure Factors - DePue Lake Sediment[1]
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Notes:
(1) Includes both DePue Lake sediment and sediment associated with groundwater seeps along the north shore of the DePue Lake.
(2) Assumes a wading scenario for the Village Park recreational user
(3) Trespassers are expected to only be exposed to sediments associated with the groundwater seeps along the north shore of DePue Lake

Equations:

Cancer Risk = [((CSFo * EPC * CF * EF * ED * IR * FI * RBA)/ (ATc * BW)) + ((CSFd * EPC * EF * ED * SA * AF* ABS * FI * CF)/(ATc * BW))]
Hazard Quotient = [((1/RfDo * EPC * EF * ED * IR * FI * CF * RBA)/ (ATnc * BW)) + ((1/RfDd * EPC * EF * ED * SA * ABS * AF * FI * CF)/(ATnc * BW))]

Sources:
(a) USEPA (1989) Risk Assessment for Superfund Volume I: Human Health Evaluation Manual (Part A). EPA/540/1-89/002. December 1989.
(b) USEPA (2004) Risk Assessment for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment). EPA/540/R/99/005. July 2004.
(c) Professional judgment
(d) USEPA (2002) Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9355.4-24. December 2002.
(e) Assumes 2 days per week for 7 months, April - October.
(f) Assumes 1 day per week for 7 months, April - October.
(g) USEPA (1997) Exposure Factors Handbook
(h) USEPA (1991) OSWER Directive 9285.6-03, Human Health Evaluation Manual, Supplemental Guidance: Standard Default Exposure Factors.
(i) Surface area represents hands, forearms, lower legs, and feet
(j) Surface area represents hands and forearms
(k) Assumes 2 days per week for 7 months, April-October, or 8 full weeks of work
(l) Assumes 1 day per week for 7 months, April-October, or 4 full weeks of work
(m) Assumes only half of exposure comes from site.
(n) Exposure frequency represents annual contact as provided by IDNR site manager at DePue/Donnely Wildlife Management Area.
(o) Exposure frequency represents upper-bound based on annual contact as provided by IDNR site manager at DePue/Donnely Wildlife Management Area.
(p) Assumes 2 days per week for 13 weeks of summer.
(q) Assumes 1 day per week for 13 weeks of summer.
(r) USFWS (2008) 2006 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation - Illinois indicates the average exposure frequency for anglers is 20 days per year; this value is used as the CTE exposure and 2.5 times this value (50 days/yr) is used as the RME exposure.
(s) Although total daily exposure will be calculated assuming that 100% of daily contact is derived from site-related media, the fraction of each exposure represented by soil vs. sediment will be adjusted on a scenario- and receptor-specific basis.
(t) Represents hands, forearms, lower legs, and feet. Average of male and female children aged 3 to 6 years
(u) Represents hands, forearms, lower legs, and feet. Average of 50th percentile for male and female adults
(v) Represents hands and forearms of adult males.
(w) Represents geometric mean for children playing in wet soil
(x) Represents 95th percentile for gardeners.
(y) Represents children playing in dry soil.
(z) Represents geometric mean for landscapers.
(aa) Represents geometric mean for gardeners

Table 4.2A
Summary of Exposure Factors - DePue Lake Sediment
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Exposure Factors	Units	Village Park Recreational User [1] (Child)	Village Park Recreational User [1] (Adult)	Lake-Wide Recreational Use [2] (Child)	Lake-Wide Recreational User [2] (Adult)
Reasonable Maximum Exposure					
Cancer Slope Factor (CSFo)	$(mg/kg\text{-}day)^{-1}$	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Reference Dose (RfDo)	mg/kg-day	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Cancer Slope Factor (CSFd)	$(mg/kg\text{-}day)^{-1}$	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Reference Dose (RfDd)	mg/kg-day	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Exposure Point Concentration (EPC)	mg/kg	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Body Weight (BW)	kg	15 (a)	70 (a)	15 (a)	70 (a)
Sediment Ingestion Rate (IR)	mg/day	200 (a,b)	100 (a,b)	200 (a,b)	100 (a,b)
Exposed Surface Area (SA)	cm^2/day	6,600 (c)	18,000 (c)	6,600 (c)	18,000 (c)
Adherence Factor (AF)	mg/cm^2	0.2 (c,d)	0.2 (c,e)	0.2 (c,d)	0.2 (c,e)
Absorption Fraction (ABS)	unitless	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Relative Bioavailability Adjustment (RBA)	unitless	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Exposure Frequency (EF)	days/year	56 (f,g)	56 (f,g)	56 (f,g)	56 (f,g)
Exposure Duration (ED)	years	6 (a)	24 (a)	6 (a)	24 (a)
Fraction Ingested from Site Lake Sediment (FI)	unitless	0.2 (a,h)	0.2 (a,h)	1 (a,l)	1 (a,l)
Fraction Ingested from Site Seep Sediment (FI)	unitless	0.3 (a,h)	0.3 (a,h)	--	--
Conversion Factor (CF)	kg/mg	1.0E-06 (a)	1.0E-06 (a)	1.0E-06 (a)	1.0E-06 (a)
Averaging Time (Cancer) (ATc)	days	25,550 (a)	25,550 (a)	25,550 (a)	25,550 (a)
Averaging Time (Non-Cancer) (ATnc)	days	2,190 (a)	8,760 (a)	2,190 (a)	8,760 (a)
Central Tendency Exposure					
Cancer Slope Factor (CSFo)	$(mg/kg\text{-}day)^{-1}$	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Reference Dose (RfDo)	mg/kg-day	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Cancer Slope Factor (CSFd)	$(mg/kg\text{-}day)^{-1}$	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Reference Dose (RfDd)	mg/kg-day	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Exposure Point Concentration (EPC)	mg/kg	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Body Weight (BW)	kg	15 (a)	70 (a)	15 (a)	70 (a)
Sediment Ingestion Rate (IR)	mg/day	100 (a,b)	50 (a,b)	100 (a,b)	50 (a,b)
Exposed Surface Area (SA)	cm^2/day	6,600 (c)	18,000 (c)	6,600 (c)	18,000 (c)
Adherence Factor (AF)	mg/cm^2	0.04 (c,i)	0.04 (c,j)	0.04 (c,i)	0.04 (c,j)
Absorption Fraction (ABS)	unitless	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Relative Bioavailability Adjustment (RBA)	unitless	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Exposure Frequency (EF)	days/year	28 (f,k)	28 (f,k)	28 (f,k)	28 (f,k)
Exposure Duration (ED)	years	6 (a)	9 (a)	6 (a)	9 (a)
Fraction Ingested from Site Lake Sediment (FI)	unitless	0.2 (a,h)	0.2 (a,h)	1 (a,l)	1 (a,l)
Fraction Ingested from Site Seep Sediment (FI)	unitless	0.3 (a,h)	0.3 (a,h)	--	--
Conversion Factor (CF)	kg/mg	1.0E-06 (a)	1.0E-06 (a)	1.0E-06 (a)	1.0E-06 (a)
Averaging Time (Cancer) (ATc)	days	25,550 (a)	25,550 (a)	25,550 (a)	25,550 (a)
Averaging Time (Non-Cancer) (ATnc)	days	2,190 (a)	3,285 (a)	2,190 (a)	3,285 (a)

Table 4.2A
Summary of Exposure Factors - DePue Lake Sediment
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Notes:
(1) Assumes a swimming scenario for the Village Park recreational user exposed to lake sediments in Sediment Area 1A
(2) Assumes a swimming scenario for a lake-wide recreational user exposed to site-wide sediments

Equations:

Cancer Risk = [((CSFo * EPC * CF * EF * ED * IR * Fl * RBA)/ (ATc * BW)) + ((CSFd * EPC * EF * ED * SA * AF* ABS * Fl * CF)/(ATc * BW))]
Hazard Quotient = [((1/RfDo * EPC * EF * ED * IR * Fl * CF * RBA)/ (ATnc * BW)) + ((1/RfDd * EPC * EF * ED * SA * ABS * AF * Fl * CF)/(ATnc * BW))]

Sources:
(a) USEPA (1989) Risk Assessment for Superfund Volume I: Human Health Evaluation Manual (Part A). EPA/540/1-89/002. December 1989.
(b) USEPA (1997) Exposure Factors Handbook
(c) USEPA (2004) Risk Assessment for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment). EPA/540/R/99/005. July 2004.
(d) Represents geometric mean for children playing in wet soil.
(e) Represents 95th percentile for gardeners.
(f) Professional judgment
(g) Assumes 2 days per week for 7 months, April - October.
(h) Although total daily exposure will be calculated assuming that 100% of daily contact is derived from site-related media, the fraction of each exposure represented by soil vs. sediment will be adjusted on a scenario- and receptor-specific basis.
(i) Represents children playing in dry soil.
(j) Represents geometric mean for landscapers.
(k) Assumes 1 day per week for 7 months, April - October.
(l) Assumes 100% of sediment exposure comes from DePue Lake.

Table 4.3
Summary of Exposure Factors - DePue Lake Surface Water[1]
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Exposure Factors	Units	Village Park Recreational User[2] (Child)	Village Park Recreational User[2] (Adult)	Boater (Child)	Boater (Adult)	Boat Angler (Child)	Boat Angler (Adult)
Reasonable Maximum Exposure							
Cancer Slope Factor (CSFo)	$(mg/kg\text{-}day)^{-1}$	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Reference Dose (RfDo)	mg/kg-day	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Cancer Slope Factor (CSFd)	$(mg/kg\text{-}day)^{-1}$	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Reference Dose (RfDd)	mg/kg-day	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Exposure Point Concentration (EPC)	mg/L; mg/cm^3	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Ingestion Rate (IR)	liters/hour	0.01 (m)	0.01 (m)	0.01 (m)	0.01 (m)	0.01 (m)	0.01 (m)
Body Weight (BW)	kg	15 (a)	70 (a)	15 (a)	70 (a)	15 (a)	70 (a)
Exposed Surface Area (SA)	cm^2	2,440 (b,f)	5,700 (b,f)	2,440 (b,f)	5,700 (b,f)	2,440 (b,f)	5,700 (b,f)
Permeability Constant (Kp)	cm/hour	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Fraction Absorbed (FA)	unitless	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Ratio of permeability coefficients (B)	unitless	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Event Duration (t_{event})	hour/event	1 (c)	1 (c)	1 (c)	1 (c)	1 (c)	1 (c)
Lag Time per Event (T-event)	hour/event	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Event Frequency (EV)	events/day	1 (c)	1 (c)	1 (c)	1 (c)	1 (c)	1 (c)
Exposure Frequeny (EF)	days/year	56 (c,j)	56 (c,j)	26 (c,n)	26 (c,n)	50 (q)	50 (q)
Exposure Duration (ED)	years	6 (a,d)	24 (a,d)	6 (a,d)	24 (a,d)	6 (a,d)	24 (a,d)
Exposure Time (ET)	hour/day	1 (c)	1 (c)	1 (c)	1 (c)	1 (c)	1 (c)
Fraction Ingested from Site (FI)	unitless	0.5 (a,r)	0.5 (a,r)	0.5 (a,r)	0.5 (a,r)	0.5 (a,r)	0.5 (a,r)
Averaging Time (Cancer) (ATc)	days	25,550 (a)	25,550 (a)	25,550 (a)	25,550 (a)	25,550 (a)	25,550 (a)
Averaging Time (Non-Cancer) (ATnc)	days	2,190 (a)	8,760 (a)	2,190 (a)	8,760 (a)	2,190 (a)	8,760 (a)
Central Tendency Exposure							
Cancer Slope Factor (CSFo)	$(mg/kg\text{-}day)^{-1}$	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Reference Dose (RfDo)	mg/kg-day	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Cancer Slope Factor (CSFd)	$(mg/kg\text{-}day)^{-1}$	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Reference Dose (RfDd)	mg/kg-day	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Exposure Point Concentration (EPC)	mg/L; mg/cm^3	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Ingestion Rate (IR)	liters/hour	0.01 (m)	0.01 (m)	0.01 (m)	0.01 (m)	0.01 (m)	0.01 (m)
Body Weight (BW)	kg	15 (a)	70 (a)	15 (a)	70 (a)	15 (a)	70 (a)
Exposed Surface Area (SA)	cm^2	2,440 (b,f)	5,700 (b,f)	2,440 (b,f)	5,700 (b,f)	2,440 (b,f)	5,700 (b,f)
Permeability Constant (Kp)	cm/hour	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Fraction Absorbed (FA)	unitless	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Ratio of permeability coefficients (B)	unitless	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Event Duration (t_{event})	hour/event	1 (c)	1 (c)	1 (c)	1 (c)	1 (c)	1 (c)
Lag Time per Event (T-event)	hour/event	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Event Frequency (EV)	events/day	1 (c)	1 (c)	1 (c)	1 (c)	1 (c)	1 (c)
Exposure Frequeny (EF)	days/year	28 (c,k)	28 (c,k)	13 (c,o)	13 (c,o)	20 (q)	20 (q)
Exposure Duration (ED)	years	6 (a)	9 (a,e)	6 (a,e)	9 (a,e)	6 (a,e)	9 (a,e)
Exposure Time (ET)	hour/day	1 (c)	1 (c)	1 (c)	1 (c)	1 (c)	1 (c)
Fraction Ingested from Site (FI)	unitless	0.5 (a,r)	0.5 (a,r)	0.5 (a,r)	0.5 (a,r)	0.5 (a,r)	0.5 (a,r)
Averaging Time (Cancer) (ATc)	days	25,550 (a)	25,550 (a)	25,550 (a)	25,550 (a)	25,550 (a)	25,550 (a)
Averaging Time (Non-Cancer) (ATnc)	days	2,190 (a)	3,285 (a)	2,190 (a)	3,285 (a)	2,190 (a)	3,285 (a)

Table 4.3
Summary of Exposure Factors - DePue Lake Surface Water
Baseline Human Health Risk Assessment, Operable Unit 5
Operable Unit 5 (DePue Lake Sediments and Floodplain), DePue, Illinois

Exposure Factors	Units	Shoreline Angler (Child)	Shoreline Angler (Adult)	Trespasser[3] (Adolescent)	Wildllife Worker and Hunter	Village Park Maintenance Worker (Adult)	Utility Maintenance Worker (Adult)
Reasonable Maximum Exposure							
Cancer Slope Factor (CSFo)	$(mg/kg\text{-}day)^{-1}$	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Reference Dose (RfDo)	mg/kg-day	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Cancer Slope Factor (CSFd)	$(mg/kg\text{-}day)^{-1}$	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Reference Dose (RfDd)	mg/kg-day	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Exposure Point Concentration (EPC)	mg/L; mg/cm^3	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Ingestion Rate (IR)	liters/hour	0.01 (m)	0.01 (m)	0.01 (m)	0.01 (m)	0.01 (m)	0.01 (m)
Body Weight (BW)	kg	15 (a)	70 (a)	45 (b)	70 (a)	70 (a)	70 (a)
Exposed Surface Area (SA)	cm^2	2,440 (b,f)	5,700 (b,f)	5,700 (b,f)	2,300 (b,g)	2,300 (b,g)	2,300 (b,g)
Permeability Constant (Kp)	cm/hour	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Fraction Absorbed (FA)	unitless	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Ratio of permeability coefficients (B)	unitless	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Event Duration (t_{event})	hour/event	1 (c)	1 (c)	1 (c)	1 (c)	1 (c)	1 (c)
Lag Time per Event (T-event)	hour/event	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Event Frequency (EV)	events/day	1 (c)	1 (c)	1 (c)	1 (c)	1 (c)	1 (c)
Exposure Frequeny (EF)	days/year	50 (q)	50 (q)	56 (c,j)	75 (c,p)	56 (c,h)	10 (c)
Exposure Duration (ED)	years	6 (a,d)	24 (a,d)	12 (a)	25 (d)	25 (d)	25 (d)
Exposure Time (ET)	hour/day	1 (c)	1 (c)	1 (c)	1 (c)	1 (c)	1 (c)
Fraction Ingested from Site (FI)	unitless	0.5 (a,r)	0.5 (a,r)	1 (a)	1 (a)	0.5 (a,r)	0.5 (a,r)
Averaging Time (Cancer) (ATc)	days	25,550 (a)	25,550 (a)	25550 (a)	25,550 (a)	25,550 (a)	25,550 (a)
Averaging Time (Non-Cancer) (ATnc)	days	2,190 (a)	8,760 (a)	4,380 (a)	9,125 (a)	9,125 (a)	9,125 (a)
Central Tendency Exposure							
Cancer Slope Factor (CSFo)	$(mg/kg\text{-}day)^{-1}$	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Reference Dose (RfDo)	mg/kg-day	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Cancer Slope Factor (CSFd)	$(mg/kg\text{-}day)^{-1}$	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Reference Dose (RfDd)	mg/kg-day	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Exposure Point Concentration (EPC)	mg/L; mg/cm^3	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Ingestion Rate (IR)	liters/hour	0.01 (m)	0.01 (m)	0.01 (m)	0.01 (m)	0.01 (m)	0.01 (m)
Body Weight (BW)	kg	15 (a)	70 (a)	45 (b)	70 (a)	70 (a)	70 (a)
Exposed Surface Area (SA)	cm^2	2,440 (b,f)	5,700 (b,f)	5,700 (b,f)	2,300 (b,g)	2,300 (b,g)	2,300 (b,g)
Permeability Constant (Kp)	cm/hour	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Fraction Absorbed (FA)	unitless	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Ratio of permeability coefficients (B)	unitless	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Event Duration (t_{event})	hour/event	1 (c)	1 (c)	1 (c)	1 (c)	1 (c)	1 (c)
Lag Time per Event (T-event)	hour/event	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Event Frequency (EV)	events/day	1 (c)	1 (c)	1 (c)	1 (c)	1 (c)	1 (c)
Exposure Frequeny (EF)	days/year	20 (q)	20 (q)	28 (c,k)	53 (c,l)	28 (c,i)	5 (c)
Exposure Duration (ED)	years	6 (a,e)	9 (a,e)	9 (a,e)	9 (a,e)	9 (a,e)	9 (a,e)
Exposure Time (ET)	hour/day	1 (c)	1 (c)	1 (c)	1 (c)	1 (c)	1 (c)
Fraction Ingested from Site (FI)	unitless	0.5 (a,r)	0.5 (a,r)	1 (a)	1 (a)	0.5 (a,r)	0.5 (a,r)
Averaging Time (Cancer) (ATc)	days	25,550 (a)	25,550 (a)	25,550 (a)	25,550 (a)	25,550 (a)	25,550 (a)
Averaging Time (Non-Cancer) (ATnc)	days	2,190 (a)	3,285 (a)	3,285 (a)	3,285 (a)	3,285 (a)	3,285 (a)

Table 4.3
Summary of Exposure Factors - DePue Lake Surface Water[1]
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Notes:
(1) Includes surface water associated with DePue Lake and shoreline seeps along the north shore of DePue Lake.
(2) Recreators are only expected to be exposed to surface water associated with shoreline seeps in the vicinity of the Village Park and surface water along the north shore of DePue Lake. Exposures represent a wading scenario.
(3) Trespassers are only expected to be exposed to surface water associated with shoreline seeps along the north shore of DePue Lake.

Equations:

Inorganics:

Cancer Risk = [((EPC * IR * EF * ED * ET * FI * CSFo)/(ATc * BW)) + ((DAevent * EV * ED * EF * SA * FI * CSFd)/(ATc * BW))]

Hazard Quotient = [((EPC * IR * EF * ED * ET * FI * 1/RfDo)/(ATnc * BW)) + ((DAevent * EV * ED * EF *SA * FI * 1/RfDd)/(ATnc * BW))]

where: DA_{event} = Kp * EPC * t-event

Organics:

Cancer Risk = [((EPC * IR * EF * ED * ET * CSFo)/(ATc * BW)) + ((DAevent * EV * ED * EF * SA * FI * CSFd)/(ATc * BW))]

Hazard Quotient = [((EPC * IR * EF * ED * ET * 1/RfDo)/(ATnc * BW)) + ((DAevent * EV * ED * EF *SA * FI * 1/RfDd)/(ATnc * BW))]

where: if $t_{event} \leq t^*$, then $DA_{event} = (2FA * Kp * EPC * ((\sqrt{(6T\text{-event} * t\text{-event})/\pi}))$

where: if $t_{event} > t^*$, then $DA_{event} = (FA * Kp * EPC *(((t\text{-event}/(1 + B) + 2T\text{-event} * ((1 + 3B + 3B^2)/(1 + B)^2)))$

Sources:
(a) USEPA (1989) Risk Assessment for Superfund Volume I: Human Health Evaluation Manual (Part A). EPA/540/1-89/002. December 1989.
(b) USEPA (1997) Exposure Factors Handbook
(c) Professional judgment
(d) USEPA (2002) Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9355.4-24. December 2002.
(e) USEPA (2004) Risk Assessment for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment). EPA/540/R/99/005. July 2004.
(f) Surface area represents hands, forearms, lower legs, and feet.
(g) Surface area represents hands and forearms.
(h) Assumes 2 days per week for 7 months, April-October, or 8 full weeks of work.
(i) Assumes 1 day per week for 7 months, April-October, or 4 full weeks of work.
(j) Assumes 2 days per week for 7 months, April - October.
(k) Assumes 1 day per week for 7 months, April - October.
(l) Exposure frequency represents upper-bound based on annual contact as provided by IDNR site manager at DePue/Donnely Wildlife Management
(m) Source: Title 35, Environmental Protection, Part 302: Water Quality Standards.
(n) Assumes 2 days per week for 13 weeks of summer.
(o) Assumes 1 day per week for 13 weeks of summer.
(p) Exposure frequency represents annual contact as provided by IDNR site manager at DePue/Donnely Wildlife Management Area.
(q) USFWS (2008) 2006 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation - Illinois indicates the average exposure frequency for anglers is 20 days per year; this value is used as the CTE exposure and 2.5 times this value (50 days/yr) is used as the RME
(r) Although total daily exposure will be calculated assuming that 100% of daily contact is derived from site-related media, the fraction of each exposure represented by lake surface water vs. groundwater seep surface water will be adjusted on a scenario- and receptor-specific basis.

Table 4.3A
Summary of Exposure Factors - DePue Lake Surface Water
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Exposure Factors	Units	Village Park Recreational User (1) (Child)	Village Park Recreational User (1) (Adult)	Lake-Wide Recreational User (2) (Child)	Lake-Wide Recreational User (2) (Adult)
Reasonable Maximum Exposure					
Cancer Slope Factor (CSFo)	$(mg/kg\text{-}day)^{-1}$	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Reference Dose (RfDo)	mg/kg-day	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Cancer Slope Factor (CSFd)	$(mg/kg\text{-}day)^{-1}$	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Reference Dose (RfDd)	mg/kg-day	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Exposure Point Concentration (EPC)	$mg/L; mg/cm^3$	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Ingestion Rate (IR)	liters/hour	0.01 (a)	0.01 (a)	0.01 (a)	0.01 (a)
Body Weight (BW)	kg	15 (b)	70 (b)	15 (b)	70 (b)
Exposed Surface Area (SA)	cm^2	6,600 (c)	18,000 (c)	6,600 (c)	18,000 (c)
Permeability Constant (Kp)	cm/hour	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Fraction Absorbed (FA)	unitless	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Ratio of permeability coefficients (B)	unitless	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Event Duration (t_{event})	hour/event	1 (d)	1 (d)	1 (d)	1 (d)
Lag Time per Event (T-event)	hour/event	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Event Frequency (EV)	events/day	1 (d)	1 (d)	1 (d)	1 (d)
Exposure Frequeny (EF)	days/year	56 (d,e)	56 (d,e)	56 (d,e)	56 (d,e)
Exposure Duration (ED)	years	6 (b)	24 (b)	6 (b)	24 (b)
Exposure Time (ET)	hour/day	1 (d)	1 (d)	1 (d)	1 (d)
Fraction Ingested from Site (FI)	unitless	0.5 (a,f)	0.5 (a,f)	1 (a)	1 (a)
Averaging Time (Cancer) (ATc)	days	25,550 (a)	25,550 (a)	25,550 (a)	25,550 (a)
Averaging Time (Non-Cancer) (ATnc)	days	2,190 (a)	8,760 (a)	2,190 (a)	8,760 (a)
Central Tendency Exposure					
Cancer Slope Factor (CSFo)	$(mg/kg\text{-}day)^{-1}$	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Reference Dose (RfDo)	mg/kg-day	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Cancer Slope Factor (CSFd)	$(mg/kg\text{-}day)^{-1}$	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Reference Dose (RfDd)	mg/kg-day	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Exposure Point Concentration (EPC)	$mg/L; mg/cm^3$	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Ingestion Rate (IR)	liters/hour	0.01 (a)	0.01 (a)	0.01 (a)	0.01 (a)
Body Weight (BW)	kg	15 (a)	70 (a)	15 (a)	70 (a)
Exposed Surface Area (SA)	cm^2	6,600 (c)	18,000 (c)	6,600 (c)	18,000 (c)
Permeability Constant (Kp)	cm/hour	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Fraction Absorbed (FA)	unitless	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Ratio of permeability coefficients (B)	unitless	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Event Duration (t_{event})	hour/event	1 (d)	1 (d)	1 (d)	1 (d)
Lag Time per Event (T-event)	hour/event	chemical-specific	chemical-specific	chemical-specific	chemical-specific
Event Frequency (EV)	events/day	1 (d)	1 (d)	1 (d)	1 (d)
Exposure Frequeny (EF)	days/year	28 (c,g)	28 (c,g)	28 (c,g)	28 (c,g)
Exposure Duration (ED)	years	6 (a)	9 (a)	6 (a)	9 (a)
Exposure Time (ET)	hour/day	1 (d)	1 (d)	1 (d)	1 (d)
Fraction Ingested from Site (FI)	unitless	0.5 (a,f)	0.5 (a,f)	1 (a)	1 (a)
Averaging Time (Cancer) (ATc)	days	25,550 (a)	25,550 (a)	25,550 (a)	25,550 (a)
Averaging Time (Non-Cancer) (ATnc)	days	2,190 (a)	3,285 (a)	2,190 (a)	3,285 (a)

Table 4.3A
Summary of Exposure Factors - DePue Lake Surface Water
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Notes:
(1) Assumes a swimming scenario for the Village Park recreational user exposed to lake surface water from the eastern portion of DePue Lake.
(2) Assumes a swimming scenario for a lake-wide recreational user exposed to site-wide surface water.

Equations:

Inorganics:

Cancer Risk = [((EPC * IR * EF * ED * ET * FI * CSFo)/(ATc * BW)) + ((DAevent * EV * ED * EF * SA * FI * CSFd)/(ATc * BW))]

Hazard Quotient = [((EPC * IR * EF * ED * ET * FI * 1/RfDo)/(ATnc * BW)) + ((DAevent * EV * ED * EF *SA * FI * 1/RfDd)/(ATnc * BW))]

where: DA_{event} = Kp * EPC * t-event

Organics:

Cancer Risk = [((EPC * IR * EF * ED * ET * CSFo)/(ATc * BW)) + ((DAevent * EV * ED * EF * SA * FI * CSFd)/(ATc * BW))]

Hazard Quotient = [((EPC * IR * EF * ED * ET * 1/RfDo)/(ATnc * BW)) + ((DAevent * EV * ED * EF *SA * FI * 1/RfDd)/(ATnc * BW))]

where: if $t_{event} \leq t^*$, then DA_{event} = (2FA * Kp * EPC * ((√(6T-event * t-event)/π))

where: if $t_{event} > t^*$, then DA_{event} = (FA * Kp * EPC *(((t-event/(1 + B) + 2T-event * ((1 + 3B + $3B^2$)/(1 + B)^2)))

Sources:
(a) Source: Title 35, Environmental Protection, Part 302: Water Quality Standards.
(b) USEPA (1989) Risk Assessment for Superfund Volume I: Human Health Evaluation Manual (Part A). EPA/540/1-89/002. December 1989.
(c) USEPA (2004) Risk Assessment for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment). EPA/540/R/99/005. July 2004.
(d) Professional judgment
(e) Assumes 2 days per week for 7 months, April - October.
(f) Although total daily exposure will be calculated assuming that 100% of daily contact is derived from site-related media, the fraction of each exposure represented by lake surface water vs. groundwater seep surface water will be adjusted on a scenario- and receptor-specific basis.
(g) Assumes 1 day per week for 7 months, April-October.

Table 4.4
Summary of Exposure Factors - Fish Consumption
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Exposure Factors	Units	Angler [1] (Child)	Angler [1] (Adult)
Reasonable Maximum Exposure			
Cancer Slope Factor (CSFo)	$(mg/kg\text{-}day)^{-1}$	chemical-specific	chemical-specific
Reference Dose (RfDo)	mg/kg-day	chemical-specific	chemical-specific
Exposure Point Concentration (EPC)	mg/kg	chemical-specific	chemical-specific
Body Weight (BW)	kg	15 (a)	70 (a)
Fish Ingestion Rate (IR)	kg/day	0.0125 (b,c)	0.025 (b)
Exposure Frequency (EF)	days/year	365 (a)	365 (a)
Exposure Duration (ED)	years	6 (a)	24 (a)
Fraction Ingested from Site (FI)	unitless	1 (a)	1 (a)
Averaging Time (Cancer) (ATc)	days	25,550 (a)	25,550 (a)
Averaging Time (Non-Cancer) (ATnc)	days	2,190 (a)	8,760 (a)
Central Tendency Exposure			
Cancer Slope Factor (CSFo)	$(mg/kg\text{-}day)^{-1}$	chemical-specific	chemical-specific
Reference Dose (RfDo)	mg/kg-day	chemical-specific	chemical-specific
Exposure Point Concentration (EPC)	mg/kg	chemical-specific	chemical-specific
Body Weight (BW)	kg	15 (a)	70 (a)
Fish Ingestion Rate (IR)	kg/day	0.004 (b,c)	0.008 (b)
Exposure Frequency (EF)	days/year	365 (a)	365 (a)
Exposure Duration (ED)	years	6 (a)	9 (a)
Fraction Ingested from Site (FI)	unitless	0.5 (d)	0.5 (d)
Averaging Time (Cancer) (ATc)	days	25,550 (a)	25,550 (a)
Averaging Time (Non-Cancer) (ATnc)	days	2,190 (a)	3,285 (a)

Note:

[1] Exposure factors apply to both boat anglers and shoreline anglers.

Equations:

Cancer Risk = ((CSFo * EPC * EF * ED * IR * FI)/ (ATc * BW))

Hazard Quotient = ((1/RfDo * EPC * EF * ED * IR * FI)/ (ATnc * BW))

Sources:

(a) USEPA (1989) Risk Assessment for Superfund Volume I: Human Health Evaluation Manual (Part A). EPA/540/1-89/002. December 1989.

(b) USEPA (1997) Exposure Factors Handbook. Value for recreational freshwater anglers.

(c) Child ingestion rate reflects one-half of the adult ingestion rate.

(d) Assumes only half of exposure comes from site.

Table 4.5
Chemical-Specific Factors
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Constituent	Dermal Absorption Fraction (ABS_d) [1] (unitless)	Relative Bioavailability Factor [2,3] (unitless)	Dermal Permeability Coefficient (Kp) [1] (cm/hr)
Benzo(a)anthracene	0.13	1	4.7E-01
Benzo(a)pyrene	0.13	1	7.0E-01
Benzo(b)fluoranthene	0.13	1	7.0E-01
Benzo(g,h,i)perylene	0.13	1	NA
Benzo(k)fluoranthene	0.13	1	NA
Chrysene	0.13	1	1.3E+01
Dibenz(a,h)anthracene	0.13	1	1.5E+00
Indeno(1,2,3-cd)pyrene	0.13	1	1.0E+00
Naphthalene	0.13	1	4.7E-02
PCBs	0.14	1	4.3E-01
Semi-volatile organic compounds	0.1	1	NA
beta-BHC	NA	1	NA
Dieldrin	NA	1	1.2E-02
Gamma-BHC (Lindane)	0.04	1	1.1E-02
Antimony	NA	1	1.0E-03
Arsenic	0.03	0.6	1.0E-03
Barium	NA	1	1.0E-03
Cadmium	0.001	1	1.0E-03
Chromium	NA	1	1.0E-03
Cobalt	NA	1	NA
Copper	NA	1	1.0E-03
Cyanide	NA	1	1.0E-03
Iron	NA	1	NA
Lead	NA	1	NA
Manganese	NA	1	1.0E-03
Mercury	NA	1	1.0E-03
Selenium	NA	1	1.0E-03
Silver	NA	1	6.0E-04
Vanadium	NA	1	1.0E-03
Zinc	NA	1	6.0E-04
Ammonia	NA	1	NA
Chloride	NA	1	NA
Fluoride	NA	1	1.0E-03
Nitrate as N	NA	1	NA
Phosphorus	NA	1	NA
Sulfate	NA	1	NA

Notes:

[1] Source: USEPA (2004) Risk Assessment Guidance for Superfund, Part E. EPA/540/R/99/005. July 2004.

[2] To be conservative, bioavailability is assumed to be 100% for all COPCs except arsenic.

[3] Based on IEPA comments received on the HHRA interim deliverable (dated January 6, 2010), IEPA will accept a "default" bioavailability factor of 0.6 for arsenic.

[4] Source: USEPA (2005) Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens.

EPA/630/R-03/003F. March 2005

NA = Not available

Table 5.1
Non-Cancer Toxicity Data -- Oral/Dermal
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Chemical of Potential Concern	Chronic/ Subchronic	Oral RfD		Oral Absorption Efficiency for Dermal	Absorbed RfD for Dermal		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfD:Target Organ(s)	
		Value	Units	(1)	Value	Units			Source(s)	Date(s) (MM/DD/YYYY)
PAHs										
Benzo(a)anthracene	Chronic	NA	mg/kg-day	0.89	NA	mg/kg-day	NA	NA	NA	NA
Benzo(a)pyrene	Chronic	NA	mg/kg-day	0.89	NA	mg/kg-day	NA	NA	NA	NA
Benzo(b)fluoranthene	Chronic	NA	mg/kg-day	0.89	NA	mg/kg-day	NA	NA	NA	NA
Benzo(g,h,i)perylene	Chronic	NA	mg/kg-day	0.89	NA	mg/kg-day	NA	NA	NA	NA
Benzo(k)fluoranthene	Chronic	NA	mg/kg-day	0.89	NA	mg/kg-day	NA	NA	NA	NA
Chrysene	Chronic	NA	mg/kg-day	0.89	NA	mg/kg-day	NA	NA	NA	NA
Dibenz(a,h)anthracene	Chronic	NA	mg/kg-day	0.89	NA	mg/kg-day	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	Chronic	NA	mg/kg-day	0.89	NA	mg/kg-day	NA	NA	NA	NA
Naphthalene	Chronic	2.0E-02	mg/kg-day	0.89	2.0E-02	mg/kg-day	body weight	3000	IRIS	9/17/1998
Pesticides/PCBs										
Aroclor 1254	Chronic	2.0E-05	mg/kg-day	0.96	2.0E-05	mg/kg-day	immune	300	IRIS	11/1/1996
Aroclor 1260	Chronic	2.0E-05	mg/kg-day	0.96	2.0E-05	mg/kg-day	immune	300	IRIS	11/1/1996
PCBs, total (soil, food)	Chronic	2.0E-05	mg/kg-day	0.96	2.0E-05	mg/kg-day	immune	300	IRIS	11/1/1996
PCBs, total (water)	Chronic	2.0E-05	mg/kg-day	0.96	2.0E-05	mg/kg-day	immune	300	IRIS	11/1/1996
beta-BHC	Chronic	6.0E-04	mg/kg-day	>0.5	6.0E-04	mg/kg-day	liver	300	ASTDR	9/1/2005
Dieldrin	Chronic	5.0E-05	mg/kg-day	>0.5	5.0E-05	mg/kg-day	liver	100	IRIS	9/1/1990
Gamma-BHC (Lindane)	Chronic	3.0E-04	mg/kg-day	>0.5	3.0E-04	mg/kg-day	liver, kidney	1000	IRIS	3/1/1998
Metals										
Antimony	Chronic	4.0E-04	mg/kg-day	0.15	6.0E-05	mg/kg-day	blood	1000	IRIS	2/1/1991
Arsenic	Chronic	3.0E-04	mg/kg-day	0.95	3.0E-04	mg/kg-day	skin	3	IRIS	2/1/1993
Barium	Chronic	2.0E-01	mg/kg-day	0.07	1.4E-02	mg/kg-day	kidney	300	IRIS	7/11/2005
Cadmium (water)	Chronic	5.0E-04	mg/kg-day	0.025	1.3E-05	mg/kg-day	kidney	10	IRIS	2/1/1994
Cadmium (food)	Chronic	1.0E-03	mg/kg-day	0.050	2.5E-05	mg/kg-day	kidney	10	IRIS	2/1/1994
Chromium (as VI)	Chronic	3.0E-03	mg/kg-day	0.025	7.5E-05	mg/kg-day	none reported	900	IRIS	9/3/1998
Cobalt	Chronic	3.0E-04	mg/kg-day	>0.5	3.0E-04	mg/kg-day	NA	NA	PPRTV	12/1/2009
Copper	Chronic	4.0E-02	mg/kg-day	>0.5	4.0E-02	mg/kg-day	NA	NA	HEAST	7/1/1997
Cyanide	Chronic	2.0E-02	mg/kg-day	>0.5	2.0E-02	mg/kg-day	weight loss, thyroid effects	500	IRIS	2/1/1993
Iron	Chronic	7.0E-01	mg/kg-day	>0.5	7.0E-01	mg/kg-day	NA	NA	PPRTV	10/1/2007
Lead	Chronic	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese (water)	Chronic	2.4E-02	mg/kg-day	0.04	9.6E-04	mg/kg-day	CNS	3	IRIS	5/1/1996
Manganese (food)	Chronic	1.4E-01	mg/kg-day	0.04	5.6E-03	mg/kg-day	CNS	1	IRIS	5/1/1996
Mercury (methyl)	Chronic	1.0E-04	mg/kg-day	0.95	1.0E-04	mg/kg-day	development	10	IRIS	7/27/2001
Selenium	Chronic	5.0E-03	mg/kg-day	0.8	5.0E-03	mg/kg-day	skin	3	IRIS	9/1/1991
Silver	Chronic	5.0E-03	mg/kg-day	0.04	2.0E-04	mg/kg-day	skin	3	IRIS	12/1/1996
Vanadium and components	Chronic	5.0E-03	mg/kg-day	0.026	1.3E-04	mg/kg-day	hair	100	IRIS	12/1/1996
Zinc	Chronic	3.0E-01	mg/kg-day	>0.5	3.0E-01	mg/kg-day	blood	3	IRIS	8/3/2005
Ammonia	Chronic	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride	Chronic	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoride	Chronic	4.0E-02	mg/kg-day	>0.5	4.0E-02	mg/kg-day	dental fluorosis	1	CalEPA	6/1/1989
Nitrate as N	Chronic	1.6E+00	mg/kg-day	>0.5	1.6E+00	mg/kg-day	blood	1	IRIS	10/1/1991
Phosphorus	Chronic	NA	mg/kg-day	>0.5	NA	mg/kg-day	NA	NA	NA	NA
Sulfate	Chronic	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 5.1
Non-Cancer Toxicity Data -- Oral/Dermal
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Notes:

(1) Source: Risk Assessment Guidance for Superfund. Volume 1: Human Health E valuation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment). Section 4.2 and Exhibit 4-1. As indicated in RAGS Part E, only chemicals with an oral absorption factor <50% were adjusted to account for absorbed dose in the dermal exposure pathway.

RAGS = Risk Assessment Guidance for Superfund

ATSDR = Agency for Toxic Substances and Disease Registry

CNS = Central nervous system

HEAST = Health Effects Assessment Summary Tables

IRIS = Integrated Risk Information System

mg/kg-day = millgrams per kilogram of body weight per day

NA = Not Available

PPRTV = Provisional Peer Reviewed Toxicity Value as cited in USEPA (2009) Regional Screening Levels. PPRTVs are developed by EPA's Office of Solid Waste and Emergency Response.

RFD = oral reference dose

Table 5.2
Non-Cancer Toxicity Data -- Inhalation
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Chemical of Potential Concern	Chronic/ Subchronic	Inhalation RfC		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfC : Target Organ(s)	
		Value	Units			Source(s)	Date(s) (MM/DD/YYYY)
Chromium (VI), particulates	Chronic	1.0E-04	mg/m^3	respiratory	300	IRIS	9/3/1998

Notes:

CNS = central nervous system

IRIS = Integrated Risk Information System

mg/kg-day = milligrams per kilogram of body weight per day

mg/m^3 = milligrams per cubic meter

RfD = oral reference dose

RfC = inhalation reference concentration

Table 6.1
Cancer Toxicity Data -- Oral/Dermal
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Chemical of Potential Concern	Mutagen	Oral Cancer Slope Factor		Oral Absorption Efficiency for Dermal	Absorbed Cancer Slope Factor for Dermal		Weight of Evidence/ Cancer Guideline Description	Oral CSF	
		Value	Units	(1)	Value	Units		Source(s)	Date(s) (MM/DD/YYYY)
PAHs									
Benzo(a)anthracene	M	7.3E-01	$(mg/kg\text{-}day)^{-1}$	0.89	7.3E-01	$(mg/kg\text{-}day)^{-1}$	B2	NCEA	12/1/2009
Benzo(a)pyrene	M	7.3E+00	$(mg/kg\text{-}day)^{-1}$	0.89	7.3E+00	$(mg/kg\text{-}day)^{-1}$	B2	IRIS	11/1/1994
Benzo(b)fluoranthene	M	7.3E-01	$(mg/kg\text{-}day)^{-1}$	0.89	7.3E-01	$(mg/kg\text{-}day)^{-1}$	B2	NCEA	12/1/2009
Benzo(g,h,i)perylene		NA	NA	NA	NA	NA	D	IRIS	12/1/1990
Benzo(k)fluoranthene	M	7.3E-02	$(mg/kg\text{-}day)^{-1}$	0.89	7.3E-02	$(mg/kg\text{-}day)^{-1}$	B2	NCEA	12/1/2009
Chrysene	M	7.3E-03	$(mg/kg\text{-}day)^{-1}$	0.89	7.3E-03	$(mg/kg\text{-}day)^{-1}$	B2	NCEA	12/1/2009
Dibenz(a,h)anthracene	M	7.3E+00	$(mg/kg\text{-}day)^{-1}$	0.89	7.3E+00	$(mg/kg\text{-}day)^{-1}$	B2	NCEA	12/1/2009
Indeno(1,2,3-cd)pyrene	M	7.3E-01	$(mg/kg\text{-}day)^{-1}$	0.89	7.3E-01	$(mg/kg\text{-}day)^{-1}$	B2	NCEA	12/1/2009
Naphthalene		NA	NA	NA	NA	NA	C	IRIS	9/17/1998
Pesticides/PCBs									
Aroclor-1254		2.0E+00	$(mg/kg\text{-}day)^{-1}$	0.96	2.0E+00	$(mg/kg\text{-}day)^{-1}$	B2	IRIS	6/1/1997
Aroclor-1260		2.0E+00	$(mg/kg\text{-}day)^{-1}$	0.96	2.0E+00	$(mg/kg\text{-}day)^{-1}$	B2	IRIS	6/1/1997
PCBs, total (soil, food)		2.0E+00	$(mg/kg\text{-}day)^{-1}$	0.96	2.0E+00	$(mg/kg\text{-}day)^{-1}$	B2	IRIS	6/1/1997
PCBs, total (water)		4.0E-01	$(mg/kg\text{-}day)^{-1}$	0.96	4.0E-01	$(mg/kg\text{-}day)^{-1}$	B2	IRIS	6/1/1997
beta-BHC		1.8E+00	$(mg/kg\text{-}day)^{-1}$	>0.5	1.8E+00	$(mg/kg\text{-}day)^{-1}$	C	IRIS	7/1/1993
Dieldrin		1.6E+01	$(mg/kg\text{-}day)^{-1}$	>0.5	1.6E+01	$(mg/kg\text{-}day)^{-1}$	B2	IRIS	7/1/1993
Gamma-BHC (Lindane)		1.1E+00	$(mg/kg\text{-}day)^{-1}$	>0.5	1.1E+00	$(mg/kg\text{-}day)^{-1}$	NA	IRIS	10/1/1993
Metals									
Antimony		NA	NA	NA	NA	NA	NA	NA	NA
Arsenic		1.5E+00	$(mg/kg\text{-}day)^{-1}$	0.95	1.5E+00	$(mg/kg\text{-}day)^{-1}$	A	IRIS	4/10/1998
Barium		NA	NA	NA	NA	NA	D	IRIS	3/30/1998
Cadmium		NA	NA	NA	NA	NA	B1	IRIS	6/1/1992
Chromium (as VI)		NA	NA	NA	NA	NA	D	IRIS	9/3/1998
Cobalt		NA	NA	NA	NA	NA	NA	NA	NA
Copper		NA	NA	NA	NA	NA	D	IRIS	8/1/1991
Cyanide		NA	NA	NA	NA	NA	D	IRIS	3/1/1991
Iron		NA	NA	NA	NA	NA	NA	NA	NA
Lead		NA	NA	NA	NA	NA	B2	IRIS	11/1/1993
Manganese		NA	NA	NA	NA	NA	D	IRIS	12/1/1996
Mercury (methyl)		NA	NA	NA	NA	NA	C	IRIS	5/1/1995
Selenium		NA	NA	NA	NA	NA	D	IRIS	7/1/1993
Silver		NA	NA	NA	NA	NA	D	IRIS	6/1/1989
Vanadium and compounds		NA	NA	NA	NA	NA	NA	NA	NA
Zinc		NA	NA	NA	NA	NA	D	IRIS	8/3/2005

Table 6.1
Cancer Toxicity Data -- Oral/Dermal
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Chemical of Potential Concern	Mutagen	Oral Cancer Slope Factor		Oral Absorption Efficiency for Dermal (1)	Absorbed Cancer Slope Factor for Dermal		Weight of Evidence/ Cancer Guideline Description	Oral CSF	
		Value	Units		Value	Units		Source(s)	Date(s) (MM/DD/YYYY)
Ammonia		NA	NA	NA	NA	NA	NA	NA	NA
Chloride		NA	NA	NA	NA	NA	NA	NA	NA
Fluoride		NA	NA	NA	NA	NA	NA	NA	NA
Nitrate as N		NA	NA	NA	NA	NA	NA	NA	NA
Phosphorus		NA	NA	NA	NA	NA	D	IRIS	2/1/1993
Sulfate		NA	NA	NA	NA	NA	NA	NA	NA

Notes:
(1) Source: Risk Assessment Guidance for Superfund. Volume 1: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment). Section 4.2 and Exhibit 4-1. As indicated in RAGS Part E, only chemicals with an oral absorption factor <50% were adjusted to account for absorbed dose in the dermal exposure pathway.

NA = Not Available

A - Human Carcinogen

B1 - Probable Human Carcinogen - indicates limited human evidence.

B2 - Probable Human Carcinogen - indicates sufficient evidence in animals and inadequate or no evidence in humans.

C - Possible Human Carcinogen

D - Not classifiable as to human carcinogenicity.

CSF = cancer slope factor

RAGS = Risk Assessment Guidance for Superfund

IRIS = Integrated Risk Information System

mg/kg-day = milligrams per kilogram of body weight per day

NCEA = National Center for Environmental Assessment

Table 6.2
CancerToxicity Data -- Inhalation
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Chemical of Potential Concern	Inhalation Unit Risk		Weight of Evidence/ Cancer Guideline Description	Unit Risk : Inhalation CSF	
	Value	Units		Source(s)	Date(s) (MM/DD/YYYY)
Chromium (VI), particulates	8.4E+01	$(mg/m^3)^{-1}$	A	IRIS	9/3/1998

Notes:

µg/m3 = micrograms per cubic meter

A - Known Human Carcinogen

CSF = cancer slope factor

IRIS = Integrated Risk Information System

mg/kg-day = millgrams per kilogram of body weight per day

Table 7.1.RME
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain Area 1B
Receptor: Trespasser
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration [a]		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Floodplain Surface Soil Floodplain Area 1B	Ingestion	Benzo(a)anthracene	7.6E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	4.E-08	1.3E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	9.5E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	5.E-07	1.6E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	1.2E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	6.E-08	2.0E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	3.7E-01	mg/kg	1.1E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	6.3E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	9.0E-01	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	5.E-09	1.5E-07	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	1.3E+00	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	7.E-10	2.2E-07	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	3.5E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	2.E-07	6.0E-08	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	6.5E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	3.E-08	1.1E-07	mg/kg/day	NA	mg/kg/day	NA
				Aroclor 1254*	1.5E-01	mg/kg	4.4E-09	mg/kg/day	2.0E+00	$(mg/kg/day)^{-1}$	9.E-09	2.6E-08	mg/kg/day	2.0E-05	mg/kg/day	1.E-03
				Dieldrin*	8.8E-03	mg/kg	2.6E-10	mg/kg/day	1.6E+01	$(mg/kg/day)^{-1}$	4.E-09	1.5E-09	mg/kg/day	5.0E-05	mg/kg/day	3.E-05
				Antimony*	5.8E+00	mg/kg	1.7E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	9.9E-07	mg/kg/day	4.0E-04	mg/kg/day	2.E-03
				Arsenic	2.9E+02	mg/kg	5.1E-06	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	8.E-06	3.0E-05	mg/kg/day	3.0E-04	mg/kg/day	1.E-01
				Barium	3.5E+03	mg/kg	1.0E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	6.0E-04	mg/kg/day	2.0E-01	mg/kg/day	3.E-03
				Cadmium	1.0E+03	mg/kg	3.1E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.8E-04	mg/kg/day	1.0E-03	mg/kg/day	2.E-01
				Cobalt*	1.6E+01	mg/kg	4.7E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.7E-06	mg/kg/day	3.0E-04	mg/kg/day	9.E-03
				Iron	3.8E+04	mg/kg	1.1E-03	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	6.5E-03	mg/kg/day	7.0E-01	mg/kg/day	9.E-03
				Lead	1.9E+03	mg/kg	5.6E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.2E-04	mg/kg/day	NA	mg/kg/day	NA
				Manganese	1.1E+03	mg/kg	3.2E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.9E-04	mg/kg/day	1.4E-01	mg/kg/day	1.E-03
				Mercury*	3.5E+00	mg/kg	1.0E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	6.0E-07	mg/kg/day	1.0E-04	mg/kg/day	6.E-03
				Selenium*	6.8E+00	mg/kg	2.0E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.2E-06	mg/kg/day	5.0E-03	mg/kg/day	2.E-04
				Silver*	2.7E+01	mg/kg	7.8E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.6E-06	mg/kg/day	5.0E-03	mg/kg/day	9.E-04
				Zinc	6.1E+04	mg/kg	1.8E-03	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.0E-02	mg/kg/day	3.0E-01	mg/kg/day	3.E-02
				Fluoride	1.5E+00	mg/kg	4.3E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.5E-07	mg/kg/day	4.0E-02	mg/kg/day	6.E-06
			Exp. Route Total								9.E-06					3.E-01
			Dermal													
				Benzo(a)anthracene	7.6E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	2.E-08	6.7E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	9.5E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	3.E-07	8.4E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	1.2E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	3.E-08	1.1E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	3.7E-01	mg/kg	5.6E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.3E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	9.0E-01	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	2.E-09	8.0E-08	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	1.3E+00	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	3.E-10	1.1E-07	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	3.5E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	9.E-08	3.1E-08	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	6.5E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	2.E-08	5.7E-08	mg/kg/day	NA	mg/kg/day	NA
				Aroclor 1254*	1.5E-01	mg/kg	2.4E-09	mg/kg/day	2.0E+00	$(mg/kg/day)^{-1}$	5.E-09	1.4E-08	mg/kg/day	2.0E-05	mg/kg/day	7.E-04
				Dieldrin*	8.8E-03	mg/kg	NA	mg/kg/day	1.6E+01	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	5.0E-05	mg/kg/day	NA
				Antimony*	5.8E+00	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	6.0E-05	mg/kg/day	NA
				Arsenic	2.9E+02	mg/kg	1.0E-06	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	2.E-06	6.0E-06	mg/kg/day	3.0E-04	mg/kg/day	2.E-02
				Barium	3.5E+03	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.4E-02	mg/kg/day	NA
				Cadmium	1.0E+03	mg/kg	1.2E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.1E-07	mg/kg/day	2.5E-05	mg/kg/day	3.E-02
				Cobalt*	1.6E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-04	mg/kg/day	NA
				Iron*	3.8E+04	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	7.0E-01	mg/kg/day	NA
				Lead	1.9E+03	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese*	1.1E+03	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	5.6E-03	mg/kg/day	NA
				Mercury*	3.5E+00	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.0E-04	mg/kg/day	NA
				Selenium*	6.8E+00	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	5.0E-03	mg/kg/day	NA
				Silver*	2.7E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	2.0E-04	mg/kg/day	NA
				Zinc	6.1E+04	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-01	mg/kg/day	NA
				Fluoride	1.5E+00	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	4.0E-02	mg/kg/day	NA
			Exp. Route Total								2.E-06					5.E-02
		Exposure Point Total									1.E-05					4.E-01
	Exposure Medium Total										1.E-05					4.E-01
Surface Soil Total											1.E-05					4.E-01

Table 7.1.RME
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain Area 1B
Receptor: Trespasser
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration [a]		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Groundwater Seeps	Sediment	Sediment	Ingestion													
		Floodplain Area 1B		Arsenic	4.6E+01	mg/kg	8.0E-07	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	1.E-06	4.7E-06	mg/kg/day	3.0E-04	mg/kg/day	2.E-02
				Cadmium	1.4E+03	mg/kg	4.1E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.4E-04	mg/kg/day	1.0E-03	mg/kg/day	2.E-01
				Lead	3.2E+02	mg/kg	9.2E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.4E-05	mg/kg/day	NA	mg/kg/day	NA
				Manganese	8.8E+02	mg/kg	2.6E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.5E-04	mg/kg/day	1.4E-01	mg/kg/day	1.E-03
				Zinc	9.6E+04	mg/kg	2.8E-03	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.6E-02	mg/kg/day	3.0E-01	mg/kg/day	5.E-02
			Exp. Route Total								1.E-06					3.E-01
			Dermal													
				Arsenic	4.6E+01	mg/kg	4.5E-07	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	7.E-07	2.7E-06	mg/kg/day	3.0E-04	mg/kg/day	9.E-03
				Cadmium	1.4E+03	mg/kg	4.7E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.8E-06	mg/kg/day	2.5E-05	mg/kg/day	1.E-01
				Lead	3.2E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	8.8E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-01	mg/kg/day	NA
				Zinc	9.6E+04	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-01	mg/kg/day	NA
			Exp. Route Total								7.E-07					1.E-01
		Exposure Point Total									2.E-06					4.E-01
	Exposure Medium Total										2.E-06					4.E-01
Groundwater Seep Sediment Total											2.E-06					4.E-01
Groundwater Seeps	Surface Water	Surface Water	Ingestion													
		Floodplain Area 1B		Cadmium	1.1E-02	mg/L	6.4E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.8E-07	mg/kg/day	5.0E-04	mg/kg/day	8.E-04
				Lead	1.5E-02	mg/L	8.6E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.0E-07	mg/kg/day	NA	mg/kg/day	NA
				Manganese	4.0E-01	mg/L	2.3E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.4E-05	mg/kg/day	2.4E-02	mg/kg/day	6.E-04
				Ammonia	6.8E-01	mg/L	4.0E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.3E-05	mg/kg/day	NA	mg/kg/day	NA
				Phosphorus	3.7E+00	mg/L	2.2E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.3E-04	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					1.E-03
			Dermal													
				Cadmium	1.1E-05	mg/cm^3	3.7E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.1E-07	mg/kg/day	1.3E-05	mg/kg/day	2.E-02
				Lead	1.5E-05	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	4.0E-04	mg/cm^3	1.3E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.8E-06	mg/kg/day	9.6E-04	mg/kg/day	8.E-03
				Ammonia	6.8E-04	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Phosphorus	3.7E-03	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					2.E-02
		Exposure Point Total									0.E+00					3.E-02
	Exposure Medium Total										0.E+00					3.E-02
Groundwater Seep Surface Water Total											0.E+00					3.E-02
Total of Receptor Risks Across All Media											1.E-05	Total of Receptor Hazards Across All Media				8.E-01

Notes:

NA = Not available

-- = Age-specific intakes for mutagenic compounds (e.g., cPAHs) are presented in Appendix F.

* Identified as a soil COPC only because constituent exceeded soil-to-groundwater criteria.

Table 7.1.CTE
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain Area 1B
Receptor: Trespasser
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Floodplain Surface Soil Floodplain Area 1B	Ingestion	Benzo(a)anthracene	7.6E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	7.E-09	3.2E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	9.5E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	8.E-08	4.0E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	1.2E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	1.E-08	5.1E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	3.7E-01	mg/kg	2.0E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.6E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	9.0E-01	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	8.E-10	3.8E-08	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	1.3E+00	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	1.E-10	5.5E-08	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	3.5E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	3.E-08	1.5E-08	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	6.5E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	6.E-09	2.8E-08	mg/kg/day	NA	mg/kg/day	NA
				Aroclor 1254*	1.5E-01	mg/kg	8.2E-10	mg/kg/day	2.0E+00	$(mg/kg/day)^{-1}$	2.E-09	6.4E-09	mg/kg/day	2.0E-05	mg/kg/day	3.E-04
				Dieldrin*	8.8E-03	mg/kg	4.8E-11	mg/kg/day	1.6E+01	$(mg/kg/day)^{-1}$	8.E-10	3.8E-10	mg/kg/day	5.0E-05	mg/kg/day	8.E-06
				Antimony*	5.8E+00	mg/kg	3.2E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.5E-07	mg/kg/day	4.0E-04	mg/kg/day	6.E-04
				Arsenic	2.9E+02	mg/kg	9.6E-07	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	1.E-06	7.5E-06	mg/kg/day	3.0E-04	mg/kg/day	2.E-02
				Barium	3.5E+03	mg/kg	1.9E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.5E-04	mg/kg/day	2.0E-01	mg/kg/day	8.E-04
				Cadmium	1.0E+03	mg/kg	5.7E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.5E-05	mg/kg/day	1.0E-03	mg/kg/day	4.E-02
				Cobalt*	1.6E+01	mg/kg	8.8E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	6.9E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				Iron*	3.8E+04	mg/kg	2.1E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.1E-04	mg/kg/day	7.0E-01	mg/kg/day	3.E-04
				Lead	1.9E+03	mg/kg	1.0E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.0E-05	mg/kg/day	NA	mg/kg/day	NA
				Manganese*	1.1E+03	mg/kg	6.0E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.7E-05	mg/kg/day	1.4E-01	mg/kg/day	3.E-04
				Mercury*	3.5E+00	mg/kg	1.9E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.5E-07	mg/kg/day	1.0E-04	mg/kg/day	1.E-03
				Selenium*	6.8E+00	mg/kg	3.7E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.9E-07	mg/kg/day	5.0E-03	mg/kg/day	6.E-05
				Silver*	2.7E+01	mg/kg	1.5E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.1E-06	mg/kg/day	5.0E-03	mg/kg/day	2.E-04
				Zinc	6.1E+04	mg/kg	3.3E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.6E-03	mg/kg/day	3.0E-01	mg/kg/day	9.E-03
				Fluoride	1.5E+00	mg/kg	4.3E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.5E-07	mg/kg/day	4.0E-02	mg/kg/day	6.E-06
			Exp. Route Total								2.E-06					8.E-02
			Dermal													
				Benzo(a)anthracene	7.6E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	4.E-09	1.9E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	9.5E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	5.E-08	3.1E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	1.2E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	6.E-09	3.9E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	3.7E-01	mg/kg	1.2E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	9.3E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	9.0E-01	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	5.E-10	2.3E-08	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	1.3E+00	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	7.E-11	3.3E-08	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	3.5E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	2.E-08	8.8E-09	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	6.5E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	3.E-09	1.6E-08	mg/kg/day	NA	mg/kg/day	NA
				Aroclor 1254*	1.5E-01	mg/kg	5.2E-10	mg/kg/day	2.0E+00	$(mg/kg/day)^{-1}$	1.E-09	5.2E-10	mg/kg/day	2.0E-05	mg/kg/day	3.E-05
				Dieldrin*	8.8E-03	mg/kg	NA	mg/kg/day	1.6E+01	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	5.0E-05	mg/kg/day	NA
				Antimony*	5.8E+00	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	6.0E-05	mg/kg/day	NA
				Arsenic	2.9E+02	mg/kg	2.2E-07	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	3.E-07	1.7E-06	mg/kg/day	3.0E-04	mg/kg/day	6.E-03
				Barium	3.5E+03	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.4E-02	mg/kg/day	NA
				Cadmium	1.0E+03	mg/kg	2.6E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.0E-07	mg/kg/day	2.5E-05	mg/kg/day	8.E-03
				Cobalt*	1.6E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-04	mg/kg/day	NA
				Iron*	3.8E+04	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	7.0E-01	mg/kg/day	NA
				Lead	1.9E+03	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese*	1.1E+03	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	5.6E-03	mg/kg/day	NA
				Mercury*	3.5E+00	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.0E-04	mg/kg/day	NA
				Selenium*	6.8E+00	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	5.0E-03	mg/kg/day	NA
				Silver*	2.7E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	2.0E-04	mg/kg/day	NA
				Zinc	6.1E+04	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-01	mg/kg/day	NA
				Fluoride	1.5E+00	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	4.0E-02	mg/kg/day	NA
			Exp. Route Total								4.E-07					1.E-02
		Exposure Point Total									2.E-06					1.E-01

Table 7.1.CTE
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain Area 1B
Receptor: Trespasser
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk			Intake/Exposure Concentration		RfD/RfC		
					Value	Units	Value	Units	Value	Units	Cancer Risk	Value	Units	Value	Units	Hazard Quotient
	Exposure Medium Total										2.E-06					1.E-01
Surface Soil Total											2.E-06					1.E-01
Groundwater Seeps	Sediment	Sediment Floodplain Area 1B	Ingestion													
				Arsenic	4.6E+01	mg/kg	1.5E-07	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	2.E-07	1.2E-06	mg/kg/day	3.0E-04	mg/kg/day	4.E-03
				Cadmium	1.4E+03	mg/kg	7.8E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	6.1E-05	mg/kg/day	1.0E-03	mg/kg/day	6.E-02
				Lead	3.2E+02	mg/kg	1.7E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.3E-05	mg/kg/day	NA	mg/kg/day	NA
				Manganese	8.8E+02	mg/kg	4.8E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.7E-05	mg/kg/day	1.4E-01	mg/kg/day	3.E-04
				Zinc	9.6E+04	mg/kg	5.2E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.1E-03	mg/kg/day	3.0E-01	mg/kg/day	1.E-02
			Exp. Route Total								2.E-07					6.E-02
			Dermal													
				Arsenic	4.6E+01	mg/kg	3.4E-08	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	5.E-08	2.7E-07	mg/kg/day	3.0E-04	mg/kg/day	9.E-04
				Cadmium	1.4E+03	mg/kg	3.5E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.8E-07	mg/kg/day	2.5E-05	mg/kg/day	1.E-02
				Lead	3.2E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	8.8E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-01	mg/kg/day	NA
				Zinc	9.6E+04	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-01	mg/kg/day	NA
			Exp. Route Total								5.E-08					1.E-02
		Exposure Point Total									3.E-07					8.E-02
	Exposure Medium Total										3.E-07					8.E-02
Groundwater Seep Sediment Total											3.E-07					8.E-02
Groundwater Seeps	Surface Water	Surface Water Floodplain Area 1B	Ingestion													
				Cadmium	1.1E-02	mg/L	2.4E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.9E-07	mg/kg/day	5.0E-04	mg/kg/day	4.E-04
				Lead	1.5E-02	mg/L	3.2E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.5E-07	mg/kg/day	NA	mg/kg/day	NA
				Manganese	4.0E-01	mg/L	8.8E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	6.9E-06	mg/kg/day	2.4E-02	mg/kg/day	3.E-04
				Ammonia	6.8E-01	mg/L	1.5E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.2E-05	mg/kg/day	NA	mg/kg/day	NA
				Phosphorus	3.7E+00	mg/L	8.2E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	6.4E-05	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					7.E-04
			Dermal													
				Cadmium	1.1E-05	mg/cm^3	1.4E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.1E-07	mg/kg/day	1.3E-05	mg/kg/day	8.E-03
				Lead	1.5E-05	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	4.0E-04	mg/cm^3	5.0E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.9E-06	mg/kg/day	9.6E-04	mg/kg/day	4.E-03
				Ammonia	6.8E-04	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Phosphorus	3.7E-03	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					1.E-02
		Exposure Point Total									0.E+00					1.E-02
	Exposure Medium Total										0.E+00					1.E-02
Groundwater Seep Surface Water Total											0.E+00					1.E-02
Total of Receptor Risks Across All Media											2.E-06	Total of Receptor Hazards Across All Media				2.E-01

Notes:

-- = Consituent is a mutagen, intakes/risk calculations are detailed in Appendix F.

NA = Not available

* Identified as a soil COPC only because constituent exceeded soil-to-groundwater criteria.

Table 7.2.RME
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain Area 1C
Receptor: Trespasser
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Floodplain Surface Soil Floodplain Area 1C	Ingestion													
				Aroclor 1254	2.6E-01	mg/kg	7.6E-09	mg/kg/day	2.0E+00	$(mg/kg/day)^{-1}$	2.E-08	4.4E-08	mg/kg/day	2.0E-05	mg/kg/day	2.E-03
				Aroclor 1260*	5.0E-02	mg/kg	1.5E-09	mg/kg/day	2.0E+00	$(mg/kg/day)^{-1}$	3.E-09	1.5E-09	mg/kg/day	2.0E-05	mg/kg/day	7.E-05
				Dieldrin*	1.3E-02	mg/kg	3.8E-10	mg/kg/day	1.6E+01	$(mg/kg/day)^{-1}$	6.E-09	3.8E-10	mg/kg/day	5.0E-05	mg/kg/day	8.E-06
				Arsenic	2.3E+01	mg/kg	4.4E-07	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	7.E-07	2.6E-06	mg/kg/day	3.0E-04	mg/kg/day	9.E-03
				Barium	1.3E+03	mg/kg	3.9E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.9E-05	mg/kg/day	2.0E-01	mg/kg/day	2.E-04
				Cadmium	6.8E+01	mg/kg	2.0E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.0E-06	mg/kg/day	1.0E-03	mg/kg/day	2.E-03
				Chromium*	4.5E+01	mg/kg	1.3E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.3E-06	mg/kg/day	3.0E-03	mg/kg/day	4.E-04
				Cobalt	2.5E+01	mg/kg	7.3E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.3E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				Copper	3.7E+03	mg/kg	1.1E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.1E-04	mg/kg/day	4.0E-02	mg/kg/day	3.E-03
				Iron	4.8E+04	mg/kg	1.4E-03	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.4E-03	mg/kg/day	7.0E-01	mg/kg/day	2.E-03
				Lead	3.0E+02	mg/kg	8.8E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	8.8E-06	mg/kg/day	NA	mg/kg/day	NA
				Manganese	2.2E+03	mg/kg	6.3E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	6.3E-05	mg/kg/day	1.4E-01	mg/kg/day	5.E-04
				Selenium*	3.7E+00	mg/kg	1.1E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.1E-07	mg/kg/day	5.0E-03	mg/kg/day	2.E-05
				Zinc	1.6E+04	mg/kg	4.6E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.6E-04	mg/kg/day	3.0E-01	mg/kg/day	2.E-03
				Fluoride	2.2E+00	mg/kg	6.5E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	6.5E-08	mg/kg/day	1.4E-01	mg/kg/day	5.E-07
			Exp. Route Total								7.E-07					2.E-02
			Dermal													
				Aroclor 1254	2.6E-01	mg/kg	4.2E-09	mg/kg/day	2.0E+00	$(mg/kg/day)^{-1}$	8.E-09	2.5E-08	mg/kg/day	2.0E-05	mg/kg/day	1.E-03
				Aroclor 1260*	5.0E-02	mg/kg	8.2E-10	mg/kg/day	2.0E+00	$(mg/kg/day)^{-1}$	2.E-09	4.8E-09	mg/kg/day	2.0E-05	mg/kg/day	2.E-04
				Dieldrin*	1.3E-02	mg/kg	NA	mg/kg/day	1.6E+01	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	5.0E-05	mg/kg/day	NA
				Arsenic	2.3E+01	mg/kg	8.0E-08	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	1.E-07	4.7E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				Barium	1.3E+03	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.4E-02	mg/kg/day	NA
				Cadmium	6.8E+01	mg/kg	8.0E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	6.5E-06	mg/kg/day	2.5E-05	mg/kg/day	3.E-01
				Chromium*	4.5E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	7.5E-05	mg/kg/day	NA
				Cobalt	2.5E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-04	mg/kg/day	NA
				Copper	3.7E+03	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	4.0E-02	mg/kg/day	NA
				Iron	4.8E+04	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	7.0E-01	mg/kg/day	NA
				Lead	3.0E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	2.2E+03	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	5.6E-03	mg/kg/day	NA
				Selenium*	3.7E+00	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	5.0E-03	mg/kg/day	NA
				Zinc	1.6E+04	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-01	mg/kg/day	NA
				Fluoride	2.2E+00	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	2.5E-05	mg/kg/day	NA
			Exp. Route Total								1.E-07					3.E-01
		Exposure Point Total									8.E-07					3.E-01
	Exposure Medium Total										8.E-07					3.E-01
Surface Soil Total											8.E-07					3.E-01

Table 7.2.RME
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain Area 1C
Receptor: Trespasser
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk			Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units	Cancer Risk	Value	Units	Value	Units	
Groundwater Seeps	Surface Water	Surface Water Floodplain Area 1C	Ingestion													
				Iron	1.5E+01	mg/L	8.9E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.2E-04	mg/kg/day	7.0E-01	mg/kg/day	7.E-04
				Lead	1.7E-02	mg/L	1.0E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.8E-07	mg/kg/day	NA	mg/kg/day	NA
				Manganese	1.5E+00	mg/L	8.6E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.0E-05	mg/kg/day	2.4E-02	mg/kg/day	2.E-03
				Ammonia	6.6E+01	mg/L	3.9E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.3E-03	mg/kg/day	NA	mg/kg/day	NA
				Phosphorus	2.4E+01	mg/L	1.4E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	8.0E-04	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					2.E-03
			Dermal													
				Iron	1.5E-02	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	7.0E-01	mg/kg/day	NA
				Lead	1.7E-05	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	1.5E-03	mg/cm^3	4.9E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.9E-05	mg/kg/day	9.6E-04	mg/kg/day	3.E-02
				Ammonia	6.6E-02	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Phosphorus	2.4E-02	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					3.E-02
		Exposure Point Total									0.E+00					3.E-02
	Exposure Medium Total										0.E+00					3.E-02
Groundwater Seep Surface Water Total											0.E+00					3.E-02
											Total of Receptor Risks Across All Media	8.E-07		Total of Receptor Hazards Across All Media		3.E-01

Notes:

NA = Not available

* Identified as a soil COPC only because constituent exceeded soil-to-groundwater criteria.

Table 7.2.CTE
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain Area 1C
Receptor: Trespasser
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Floodplain Surface Soil Floodplain Area 1C	Ingestion													
				Aroclor 1254	2.6E-01	mg/kg	1.4E-09	mg/kg/day	2.0E+00	$(mg/kg/day)^{-1}$	3.E-09	1.1E-08	mg/kg/day	2.0E-05	mg/kg/day	5.5.E-04
				Aroclor 1260*	5.0E-02	mg/kg	2.7E-10	mg/kg/day	2.0E+00	$(mg/kg/day)^{-1}$	5.E-10	2.1E-09	mg/kg/day	2.0E-05	mg/kg/day	1.1.E-04
				Dieldrin*	1.3E-02	mg/kg	7.1E-11	mg/kg/day	1.6E+01	$(mg/kg/day)^{-1}$	1.E-09	5.5E-10	mg/kg/day	5.0E-05	mg/kg/day	1.1.E-05
				Arsenic	2.3E+01	mg/kg	7.5E-08	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	1.E-07	5.8E-07	mg/kg/day	3.0E-04	mg/kg/day	1.9.E-03
				Barium	1.3E+03	mg/kg	7.2E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.6E-05	mg/kg/day	2.0E-01	mg/kg/day	2.8.E-04
				Cadmium	6.8E+01	mg/kg	3.7E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.9E-06	mg/kg/day	1.0E-03	mg/kg/day	2.9.E-03
				Chromium*	4.5E+01	mg/kg	2.4E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.9E-06	mg/kg/day	3.0E-03	mg/kg/day	6.3.E-04
				Cobalt	2.5E+01	mg/kg	1.4E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.1E-06	mg/kg/day	3.0E-04	mg/kg/day	3.6.E-03
				Copper	3.7E+03	mg/kg	2.0E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.6E-04	mg/kg/day	4.0E-02	mg/kg/day	3.9.E-03
				Iron	4.8E+04	mg/kg	2.6E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.0E-03	mg/kg/day	7.0E-01	mg/kg/day	2.9.E-03
				Lead	3.0E+02	mg/kg	1.7E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.3E-05	mg/kg/day	NA	mg/kg/day	NA
				Manganese	2.2E+03	mg/kg	1.2E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	9.2E-05	mg/kg/day	1.4E-01	mg/kg/day	6.6.E-04
				Selenium*	3.7E+00	mg/kg	2.0E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.6E-07	mg/kg/day	5.0E-03	mg/kg/day	3.2.E-05
				Zinc	1.6E+04	mg/kg	8.7E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	6.8E-04	mg/kg/day	3.0E-01	mg/kg/day	2.3.E-03
				Fluoride	2.2E+00	mg/kg	1.2E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	9.5E-08	mg/kg/day	1.4E-01	mg/kg/day	6.8.E-07
			Exp. Route Total								1.E-07					2.E-02
			Dermal													
				Aroclor 1254	2.6E-01	mg/kg	9.1E-10	mg/kg/day	2.0E+00	$(mg/kg/day)^{-1}$	2.E-09	7.1E-09	mg/kg/day	2.0E-05	mg/kg/day	4.E-04
				Aroclor 1260*	5.0E-02	mg/kg	1.7E-10	mg/kg/day	2.0E+00	$(mg/kg/day)^{-1}$	3.E-10	1.4E-09	mg/kg/day	2.0E-05	mg/kg/day	7.E-05
				Dieldrin*	1.3E-02	mg/kg	NA	mg/kg/day	1.6E+01	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	5.0E-05	mg/kg/day	NA
				Arsenic	2.3E+01	mg/kg	1.7E-08	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	3.E-08	1.3E-07	mg/kg/day	3.0E-04	mg/kg/day	4.E-04
				Barium	1.3E+03	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.4E-02	mg/kg/day	NA
				Cadmium	6.8E+01	mg/kg	1.7E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.3E-08	mg/kg/day	2.5E-05	mg/kg/day	5.E-04
				Chromium*	4.5E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	7.5E-05	mg/kg/day	NA
				Cobalt	2.5E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-04	mg/kg/day	NA
				Copper	3.7E+03	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	4.0E-02	mg/kg/day	NA
				Iron	4.8E+04	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	7.0E-01	mg/kg/day	NA
				Lead	3.0E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	2.2E+03	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	5.6E-03	mg/kg/day	NA
				Selenium*	3.7E+00	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	5.0E-03	mg/kg/day	NA
				Zinc	1.6E+04	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-01	mg/kg/day	NA
				Fluoride	2.2E+00	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	2.5E-05	mg/kg/day	NA
			Exp. Route Total								3.E-08					1.E-03
		Exposure Point Total									1.E-07					2.E-02
	Exposure Medium Total										1.E-07					2.E-02
Surface Soil Total											1.E-07					2.E-02

Table 7.2.CTE
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain Area 1C
Receptor: Trespasser
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Groundwater Seeps	Surface Water	Surface Water Floodplain Area 1C	Ingestion													
				Iron	1.5E+01	mg/L	3.4E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.6E-04	mg/kg/day	7.0E-01	mg/kg/day	4.E-04
				Lead	1.7E-02	mg/L	3.7E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.9E-07	mg/kg/day	NA	mg/kg/day	NA
				Manganese	1.5E+00	mg/L	3.2E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.5E-05	mg/kg/day	2.4E-02	mg/kg/day	1.E-03
				Ammonia	6.6E+01	mg/L	1.5E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.1E-03	mg/kg/day	NA	mg/kg/day	NA
				Phosphorus	2.4E+01	mg/L	5.2E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.0E-04	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					1.E-03
			Dermal													
				Iron	1.5E-02	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	7.0E-01	mg/kg/day	NA
				Lead	1.7E-05	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	1.5E-03	mg/cm^3	1.8E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.4E-05	mg/kg/day	9.6E-04	mg/kg/day	1.E-02
				Ammonia	6.6E-02	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Phosphorus	2.4E-02	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					1.E-02
		Exposure Point Total									0.E+00					2.E-02
	Exposure Medium Total										0.E+00					2.E-02
Groundwater Seep Surface Water Total											0.E+00					2.E-02
											Total of Receptor Risks Across All Media	1.E-07			Total of Receptor Hazards Across All Media	4.E-02

Notes:

NA = Not available

* Identified as a soil COPC only because constituent exceeded soil-to-groundwater criteria.

Table 7.3.RME
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain Area 2
Receptor: Trespasser
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk			Intake/Exposure Concentration		RfD/RfC		
					Value	Units	Value	Units	Value	Units	Cancer Risk	Value	Units	Value	Units	Hazard Quotient
Surface Soil	Surface Soil	Floodplain	Ingestion													
		Surface Soil		Benzo(a)anthracene	1.2E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	6.E-09	2.0E-08	mg/kg/day	NA	mg/kg/day	NA
		Floodplain Area 2		Benzo(a)pyrene	1.7E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	9.E-08	2.9E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	1.7E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	9.E-09	2.9E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	1.6E-01	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	9.E-10	2.7E-08	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	1.7E-01	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	9.E-11	2.9E-08	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	1.5E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	8.E-09	2.6E-08	mg/kg/day	NA	mg/kg/day	NA
				Arsenic	1.0E+01	mg/kg	1.8E-07	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	3.E-07	1.1E-06	mg/kg/day	3.0E-04	mg/kg/day	4.E-03
				Barium	5.1E+02	mg/kg	1.5E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	8.7E-05	mg/kg/day	2.0E-01	mg/kg/day	4.E-04
				Cadmium *	1.2E+01	mg/kg	3.4E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.0E-06	mg/kg/day	1.0E-03	mg/kg/day	2.E-03
				Chromium*	4.4E+01	mg/kg	1.3E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.5E-06	mg/kg/day	3.0E-03	mg/kg/day	3.E-03
				Cobalt*	1.0E+01	mg/kg	3.0E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.7E-06	mg/kg/day	3.0E-04	mg/kg/day	6.E-03
				Iron	2.7E+04	mg/kg	8.0E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.7E-03	mg/kg/day	7.0E-01	mg/kg/day	7.E-03
				Lead*	6.0E+01	mg/kg	1.8E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.0E-05	mg/kg/day	NA	mg/kg/day	NA
				Manganese *	7.4E+02	mg/kg	2.1E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.3E-04	mg/kg/day	1.4E-01	mg/kg/day	9.E-04
			Exp. Route Total								4.E-07					2.E-02
			Dermal													
				Benzo(a)anthracene	1.2E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	3.E-09	1.1E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	1.7E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	5.E-08	1.5E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	1.7E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	5.E-09	1.5E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	1.6E-01	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	4.E-10	1.4E-08	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	1.7E-01	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	5.E-11	1.5E-08	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	1.5E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	4.E-09	1.3E-08	mg/kg/day	NA	mg/kg/day	NA
				Arsenic	1.0E+01	mg/kg	3.6E-08	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	5.E-08	2.1E-07	mg/kg/day	3.0E-04	mg/kg/day	7.E-04
				Barium	5.1E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.4E-02	mg/kg/day	NA
				Cadmium *	1.2E+01	mg/kg	1.3E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.8E-09	mg/kg/day	2.5E-05	mg/kg/day	3.E-04
				Chromium*	4.4E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	7.5E-05	mg/kg/day	NA
				Cobalt*	1.0E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-04	mg/kg/day	NA
				Iron	2.7E+04	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	7.0E-01	mg/kg/day	NA
				Lead*	6.0E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese *	7.4E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	5.6E-03	mg/kg/day	NA
			Exp. Route Total								1.E-07					1.E-03
		Exposure Point Total									5.E-07					2.E-02
	Exposure Medium Total										5.E-07					2.E-02
Surface Soil Total											5.E-07					2.E-02
										Total of Receptor Risks Across All Media	5.E-07				Total of Receptor Hazards Across All Media	2.E-02

Notes:

NA = Not available

-- = Consituent is a mutagen, intakes/risk calculations are detailed in Appendix F.

* Identified as a soil COPC only because constituent exceeded soil-to-groundwater criteria.

Table 7.3.CTE
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain Area 2
Receptor: Trespasser
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Floodplain	Ingestion													
		Surface Soil		Benzo(a)anthracene	1.2E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	1.E-09	5.1E-09	mg/kg/day	NA	mg/kg/day	NA
		Floodplain Area 2		Benzo(a)pyrene	1.7E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	2.E-08	7.2E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	1.7E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	2.E-09	7.2E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	1.6E-01	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	1.E-10	6.8E-09	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	1.7E-01	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	2.E-11	7.2E-09	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	1.5E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	1.E-09	6.4E-09	mg/kg/day	NA	mg/kg/day	NA
				Arsenic	1.0E+01	mg/kg	3.4E-08	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	5.E-08	2.6E-07	mg/kg/day	3.0E-04	mg/kg/day	9.E-04
				Barium	5.1E+02	mg/kg	2.8E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.2E-05	mg/kg/day	2.0E-01	mg/kg/day	1.E-04
				Cadmium *	1.2E+01	mg/kg	6.3E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.9E-07	mg/kg/day	1.0E-03	mg/kg/day	5.E-04
				Chromium*	4.4E+01	mg/kg	2.4E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.9E-06	mg/kg/day	3.0E-03	mg/kg/day	6.E-04
				Cobalt*	1.0E+01	mg/kg	5.6E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.3E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Iron	2.7E+04	mg/kg	1.5E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.2E-03	mg/kg/day	7.0E-01	mg/kg/day	2.E-03
				Lead*	6.0E+01	mg/kg	3.3E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.6E-06	mg/kg/day	NA	mg/kg/day	NA
				Manganese *	7.4E+02	mg/kg	4.0E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.1E-05	mg/kg/day	1.4E-01	mg/kg/day	2.E-04
			Exp. Route Total								7.E-08					5.E-03
			Dermal													
				Benzo(a)anthracene	1.2E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	7.E-10	3.0E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	1.7E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	9.E-09	4.3E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	1.7E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	9.E-10	4.3E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	1.6E-01	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	9.E-11	4.0E-09	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	1.7E-01	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	9.E-12	4.3E-09	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	1.5E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	8.E-10	3.8E-09	mg/kg/day	NA	mg/kg/day	NA
				Arsenic	1.0E+01	mg/kg	7.7E-09	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	1.E-08	6.0E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Barium	5.1E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.4E-02	mg/kg/day	NA
				Cadmium *	1.2E+01	mg/kg	2.9E-10	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.2E-09	mg/kg/day	2.5E-05	mg/kg/day	9.E-05
				Chromium*	4.4E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	7.5E-05	mg/kg/day	NA
				Cobalt*	1.0E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-04	mg/kg/day	NA
				Iron	2.7E+04	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	7.0E-01	mg/kg/day	NA
				Lead*	6.0E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese *	7.4E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	5.6E-03	mg/kg/day	NA
			Exp. Route Total								2.E-08					3.E-04
		Exposure Point Total									9.E-08					6.E-03
	Exposure Medium Total										9.E-08					6.E-03
Surface Soil Total											9.E-08					6.E-03
										Total of Receptor Risks Across All Media	9.E-08			Total of Receptor Hazards Across All Media		6.E-03

Notes:

NA = Not available

-- = Consituent is a mutagen, intakes/risk calculations are detailed in Appendix F.

* Identified as a soil COPC only because constituent exceeded soil-to-groundwater criteria.

Table 7.4.RME
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain Area 3
Receptor: Trespasser
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Floodplain	Ingestion													
		Surface Soil		Benzo(a)anthracene	1.2E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	6.E-09	2.0E-08	mg/kg/day	NA	mg/kg/day	NA
		Floodplain Area 3		Benzo(a)pyrene	1.4E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	7.E-08	2.4E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	2.6E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	1.E-08	4.4E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	8.0E-02	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	4.E-10	1.4E-08	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	1.5E-01	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	8.E-11	2.6E-08	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	3.4E-02	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	2.E-08	5.8E-09	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	1.2E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	6.E-09	2.0E-08	mg/kg/day	NA	mg/kg/day	NA
				Beta-BHC*	2.8E-02	mg/kg	8.2E-10	mg/kg/day	1.8E+00	$(mg/kg/day)^{-1}$	1.E-09	4.8E-09	mg/kg/day	6.0E-04	mg/kg/day	8.E-06
				Antimony *	1.4E+00	mg/kg	4.1E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.4E-07	mg/kg/day	4.0E-04	mg/kg/day	6.E-04
				Chromium*	4.7E+01	mg/kg	1.4E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	8.0E-06	mg/kg/day	3.0E-03	mg/kg/day	3.E-03
			Exp. Route Total								1.E-07					3.E-03
			Dermal													
				Benzo(a)anthracene	1.2E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	3.E-09	1.1E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	1.4E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	4.E-08	1.2E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	2.6E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	7.E-09	2.3E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	8.0E-02	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	2.E-10	7.1E-09	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	1.5E-01	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	4.E-11	1.3E-08	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	3.4E-02	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	9.E-09	3.0E-09	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	1.2E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	3.E-09	1.1E-08	mg/kg/day	NA	mg/kg/day	NA
				Beta-BHC*	2.8E-02	mg/kg	NA	mg/kg/day	1.8E+00	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	6.0E-04	mg/kg/day	NA
				Antimony *	1.4E+00	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	6.0E-05	mg/kg/day	NA
				Chromium*	4.7E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	7.5E-05	mg/kg/day	NA
			Exp. Route Total								6.E-08					0.E+00
		Exposure Point Total									2.E-07					3.E-03
	Exposure Medium Total										2.E-07					3.E-03
Surface Soil Total											2.E-07					3.E-03
Total of Receptor Risks Across All Media											2.E-07	Total of Receptor Hazards Across All Media				3.E-03

Notes:

NA = Not available

-- = Consituent is a mutagen, intakes/risk calculations are detailed in Appendix F.

* Identified as a soil COPC only because constituent exceeded soil-to-groundwater criteria.

Table 7.4.CTE
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain Area 3
Receptor: Trespasser
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk			Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units	Cancer Risk	Value	Units	Value	Units	
Surface Soil	Surface Soil	Floodplain Surface Soil Floodplain Area 3	Ingestion													
				Benzo(a)anthracene	1.2E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	1.E-09	5.1E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	1.4E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	1.E-08	6.0E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	2.6E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	2.E-09	1.1E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	8.0E-02	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	7.E-11	3.4E-09	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	1.5E-01	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	1.E-11	6.4E-09	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	3.4E-02	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	3.E-09	1.4E-09	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	1.2E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	1.E-09	5.1E-09	mg/kg/day	NA	mg/kg/day	NA
				Beta-BHC*	2.8E-02	mg/kg	1.5E-10	mg/kg/day	1.8E+00	$(mg/kg/day)^{-1}$	3.E-10	1.2E-09	mg/kg/day	6.0E-04	mg/kg/day	2.E-06
				Antimony *	1.4E+00	mg/kg	7.7E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	6.0E-08	mg/kg/day	4.0E-04	mg/kg/day	1.E-04
				Chromium*	4.7E+01	mg/kg	2.6E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.0E-06	mg/kg/day	3.0E-03	mg/kg/day	7.E-04
			Exp. Route Total								2.E-08					8.E-04
			Dermal													
				Benzo(a)anthracene	1.2E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	7.E-10	3.0E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	1.4E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	8.E-09	3.5E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	2.6E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	1.E-09	6.6E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	8.0E-02	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	4.E-11	2.0E-09	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	1.5E-01	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	8.E-12	3.8E-09	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	3.4E-02	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	2.E-09	8.6E-10	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	1.2E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	7.E-10	3.0E-09	mg/kg/day	NA	mg/kg/day	NA
				Beta-BHC*	2.8E-02	mg/kg	NA	mg/kg/day	1.8E+00	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	6.0E-04	mg/kg/day	NA
				Antimony *	1.4E+00	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	6.0E-05	mg/kg/day	NA
				Chromium*	4.7E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	7.5E-05	mg/kg/day	NA
			Exp. Route Total								1.E-08					0.E+00
		Exposure Point Total									3.E-08					8.E-04
	Exposure Medium Total										3.E-08					8.E-04
Surface Soil Total											3.E-08					8.E-04
										Total of Receptor Risks Across All Media	3.E-08			Total of Receptor Hazards Across All Media		8.E-04

Notes:

NA = Not available

-- = Consituent is a mutagen, intakes/risk calculations are detailed in Appendix F.

* Identified as a soil COPC only because constituent exceeded soil-to-groundwater criteria.

Table 7.5.RME
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor: Village Park Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Sediment	Surface Sediment	DePue Lake Surface Sediment Sediment Area 1A (Wading Scenario)	Ingestion													
				Benzo(a)anthracene	4.0E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	1.E-07	1.8E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	3.4E+00	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	9.E-07	1.5E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	2.8E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	7.E-08	1.2E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	1.2E+00	mg/kg	1.8E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.3E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	3.0E+00	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	8.E-09	1.3E-07	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	3.5E+00	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	9.E-10	1.5E-07	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	5.5E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	1.E-07	2.4E-08	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	1.7E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	4.E-08	7.5E-08	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	2.1E+00	mg/kg	3.2E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	9.2E-08	mg/kg/day	2.0E-02	mg/kg/day	5.E-06
				Arsenic	1.7E+01	mg/kg	1.5E-07	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	2.E-07	4.4E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Barium	4.2E+01	mg/kg	6.3E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.8E-06	mg/kg/day	2.0E-01	mg/kg/day	9.E-06
				Cadmium	8.1E+01	mg/kg	1.2E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.5E-06	mg/kg/day	1.0E-03	mg/kg/day	4.E-03
				Lead	2.7E+02	mg/kg	4.1E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.2E-05	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								1.E-06					5.E-03
			Dermal													
				Benzo(a)anthracene	4.0E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	2.E-07	2.6E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	3.4E+00	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	1.E-06	2.2E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	2.8E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	1.E-07	1.8E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	1.2E+00	mg/kg	2.7E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.8E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	3.0E+00	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	1.E-08	1.9E-07	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	3.5E+00	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	1.E-09	2.3E-07	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	5.5E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	2.E-07	3.6E-08	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	1.7E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	7.E-08	1.1E-07	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	2.1E+00	mg/kg	4.7E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.4E-07	mg/kg/day	2.0E-02	mg/kg/day	7.E-06
				Arsenic	1.7E+01	mg/kg	8.7E-08	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	1.E-07	2.5E-07	mg/kg/day	3.0E-04	mg/kg/day	8.E-04
				Barium	4.2E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.4E-02	mg/kg/day	NA
				Cadmium	8.1E+01	mg/kg	1.4E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.0E-08	mg/kg/day	2.5E-05	mg/kg/day	2.E-03
				Lead	2.7E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								2.E-06					2.E-03
		Exposure Point Total									3.E-06					8.E-03
	Exposure Medium Total										3.E-06					8.E-03
Sediment Soil Total											3.E-06					8.E-03
Surface Water	Surface Water	DePue Lake Surface Water Eastern Portion of Lake (Wading Scenario)	Ingestion													
				Cadmium	3.5E-03	mg/L	1.3E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.8E-08	mg/kg/day	5.0E-04	mg/kg/day	8.E-05
				Lead	2.0E-02	mg/L	7.5E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.2E-07	mg/kg/day	NA	mg/kg/day	NA
				Manganese	3.8E-01	mg/L	1.4E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.1E-06	mg/kg/day	2.4E-02	mg/kg/day	2.E-04
				Ammonia	7.3E-01	mg/L	2.7E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	8.0E-06	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.6E+02	mg/L	5.9E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.7E-03	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	1.3E+01	mg/L	4.8E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.4E-04	mg/kg/day	1.6E+00	mg/kg/day	9.E-05
				Phosphorus	2.7E+00	mg/L	1.0E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.9E-05	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					3.E-04

Table 7.5.RME
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor: Village Park Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface Water	Surface Water	DePue Lake	Dermal													
		Surface Water		Cadmium	3.5E-06	mg/cm^3	7.5E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.2E-08	mg/kg/day	1.3E-05	mg/kg/day	2.E-03
		Eastern Portion of		Lead	2.0E-05	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
		Lake		Manganese	3.8E-04	mg/cm^3	8.1E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.3E-06	mg/kg/day	9.6E-04	mg/kg/day	2.E-03
		(Wading Scenario)		Ammonia	7.3E-04	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.6E-01	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	1.3E-02	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.6E+00	mg/kg/day	NA
				Phosphorus	2.7E-03	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					4.E-03
		Exposure Point Total									0.E+00					4.E-03
	Exposure Medium Total										0.E+00					4.E-03
Surface Water Total											0.E+00					4.E-03
Groundwater Seeps	Sediment	Seep Sediment	Ingestion													
		Floodplain Area 1A		Arsenic	9.6E+00	mg/kg	1.3E-07	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	2.E-07	3.8E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
		(Wading Scenario)	Exp. Route Total								2.E-07					1.E-03
			Dermal													
				Arsenic	9.6E+00	mg/kg	7.4E-08	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	1.E-07	2.2E-07	mg/kg/day	3.0E-04	mg/kg/day	7.E-04
			Exp. Route Total								1.E-07					7.E-04
		Exposure Point Total									3.E-07					2.E-03
	Exposure Medium Total										3.E-07					2.E-03
Groundwater Seep Sediment Total											3.E-07					2.E-03
Groundwater Seeps	Surface Water	Seep Surface Water	Ingestion													
		Floodplain Area 1A		Manganese	4.0E-01	mg/L	1.5E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.4E-06	mg/kg/day	2.4E-02	mg/kg/day	2.E-04
		(Wading Scenario)		Ammonia	5.1E-01	mg/L	1.9E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.6E-06	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					2.E-04
			Dermal													
				Manganese	4.0E-04	mg/cm^3	8.6E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.5E-06	mg/kg/day	9.6E-04	mg/kg/day	3.E-03
				Ammonia	5.1E-04	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					3.E-03
		Exposure Point Total									0.E+00					3.E-03
	Exposure Medium Total										0.E+00					3.E-03
Groundwater Seep Surface Water Total											0.E+00					3.E-03
										Total of Receptor Risks Across All Media	4.E-06			Total of Receptor Hazards Across All Media		2.E-02

Note:

NA = Not available

-- = Consituent is a mutagen, intakes/risk calculations are detailed in Appendix F.

Table 7.5.CTE
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor: Village Park Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk			Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units	Cancer Risk	Value	Units	Value	Units	
Sediment	Sediment	DePue Lake	Ingestion													
		Surface Sediment		Benzo(a)anthracene	4.0E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	1.E-08	4.4E-08	mg/kg/day	NA	mg/kg/day	NA
		Sediment Area 1A		Benzo(a)pyrene	3.4E+00	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	1.E-07	3.7E-08	mg/kg/day	NA	mg/kg/day	NA
		(Wading Scenario)		Benzo(b)fluoranthene	2.8E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	1.E-08	3.1E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	1.2E+00	mg/kg	1.7E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.3E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	3.0E+00	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	1.E-09	3.3E-08	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	3.5E+00	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	1.E-10	3.8E-08	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	5.5E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	2.E-08	6.0E-09	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	1.7E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	6.E-09	1.9E-08	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	2.1E+00	mg/kg	3.0E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.3E-08	mg/kg/day	2.0E-02	mg/kg/day	1.E-06
				Arsenic	1.7E+01	mg/kg	1.4E-08	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	2.E-08	1.1E-07	mg/kg/day	3.0E-04	mg/kg/day	4.E-04
				Barium	4.2E+01	mg/kg	3.6E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.8E-07	mg/kg/day	2.0E-01	mg/kg/day	1.E-06
				Cadmium	8.1E+01	mg/kg	1.1E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	8.9E-07	mg/kg/day	1.0E-03	mg/kg/day	9.E-04
				Lead	2.7E+02	mg/kg	3.8E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.0E-06	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								2.E-07					1.E-03
			Dermal													
				Benzo(a)anthracene	4.0E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	8.E-09	2.6E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	3.4E+00	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	7.E-08	2.2E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	2.8E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	6.E-09	1.8E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	1.2E+00	mg/kg	1.0E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.8E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	3.0E+00	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	6.E-10	1.9E-08	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	3.5E+00	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	7.E-11	2.3E-08	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	5.5E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	1.E-08	4.6E-10	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	1.7E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	4.E-09	1.1E-08	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	2.1E+00	mg/kg	1.8E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.4E-08	mg/kg/day	2.0E-02	mg/kg/day	7.E-07
				Arsenic	1.7E+01	mg/kg	3.3E-09	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	5.E-09	2.5E-08	mg/kg/day	3.0E-04	mg/kg/day	8.E-05
				Barium	4.2E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.4E-02	mg/kg/day	NA
				Cadmium	8.1E+01	mg/kg	5.2E-10	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.0E-09	mg/kg/day	2.5E-05	mg/kg/day	2.E-04
				Lead	2.7E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								1.E-07					2.E-04
		Exposure Point Total									3.E-07					2.E-03
	Exposure Medium Total										3.E-07					2.E-03
Sediment Soil Total											3.E-07					2.E-03
Surface Water	Surface Water	DePue Lake	Ingestion													
		Surface Water		Cadmium	3.5E-03	mg/L	2.5E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.9E-08	mg/kg/day	5.0E-04	mg/kg/day	4.E-05
		Eastern Portion of		Lead	2.0E-02	mg/L	1.4E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.1E-07	mg/kg/day	NA	mg/kg/day	NA
		Lake		Manganese	3.8E-01	mg/L	2.6E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.1E-06	mg/kg/day	2.4E-02	mg/kg/day	9.E-05
		(Wading Scenario)		Ammonia	7.3E-01	mg/L	5.1E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.0E-06	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.6E+02	mg/L	1.1E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	8.6E-04	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	1.3E+01	mg/L	9.0E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.0E-05	mg/kg/day	1.6E+00	mg/kg/day	4.E-05
				Phosphorus	2.7E+00	mg/L	1.9E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.5E-05	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					2.E-04

Table 7.5.CTE
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor: Village Park Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Water	Surface Water	DePue Lake Surface Water Eastern Portion of Lake (Wading Scenario)	Dermal	Cadmium	3.5E-06	mg/cm^3	1.4E-09	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	1.1E-08	mg/kg/day	1.3E-05	mg/kg/day	8.E-04
				Lead	2.0E-05	mg/cm^3	NA	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	3.8E-04	mg/cm^3	1.5E-07	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	1.2E-06	mg/kg/day	9.6E-04	mg/kg/day	1.E-03
				Ammonia	7.3E-04	mg/cm^3	NA	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.6E-01	mg/cm^3	NA	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	1.3E-02	mg/cm^3	NA	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	NA	mg/kg/day	1.6E+00	mg/kg/day	NA
				Phosphorus	2.7E-03	mg/cm^3	NA	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					2.E-03
		Exposure Point Total									0.E+00					2.E-03
	Exposure Medium Total										0.E+00					2.E-03
Surface Water Total											0.E+00					2.E-03
Groundwater Seeps	Sediment	Seep Sediment Floodplain Area 1A (Wading Scenario)	Ingestion	Arsenic	9.6E+00	mg/kg	1.2E-08	mg/kg/day	1.5E+00	(mg/kg/day)$^{-1}$	2.E-08	9.5E-08	mg/kg/day	3.0E-04	mg/kg/day	3.E-04
			Exp. Route Total								2.E-08					3.E-04
			Dermal	Arsenic	9.6E+00	mg/kg	2.8E-09	mg/kg/day	1.5E+00	(mg/kg/day)$^{-1}$	4.E-09	2.2E-08	mg/kg/day	3.0E-04	mg/kg/day	7.E-05
			Exp. Route Total								4.E-09					7.E-05
		Exposure Point Total									2.E-08					4.E-04
	Exposure Medium Total										2.E-08					4.E-04
Groundwater Seep Sediment Total											2.E-08					4.E-04
Groundwater Seeps	Surface Water	Seep Surface Water Floodplain Area 1A (Wading Scenario)	Ingestion	Manganese	4.0E-01	mg/L	2.8E-07	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	2.2E-06	mg/kg/day	2.4E-02	mg/kg/day	9.E-05
				Ammonia	5.1E-01	mg/L	3.6E-07	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	2.8E-06	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					9.E-05
			Dermal	Manganese	4.0E-04	mg/cm^3	1.6E-07	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	1.3E-06	mg/kg/day	9.6E-04	mg/kg/day	1.E-03
				Ammonia	5.1E-04	mg/cm^3	NA	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					1.E-03
		Exposure Point Total									0.E+00					1.E-03
	Exposure Medium Total										0.E+00					1.E-03
Groundwater Seep Surface Water Total											0.E+00					1.E-03
										Total of Receptor Risks Across All Media	3.E-07			Total of Receptor Hazards Across All Media		6.E-03

Notes:

NA = Not available

-- = Consituent is a mutagen, intakes/risk calculations are detailed in Appendix F.

Table 7.5A.RME
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor: Village Park Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk			Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units	Cancer Risk	Value	Units	Value	Units	
Sediment	Surface Sediment	DePue Lake	Ingestion													
		Surface Sediment		Benzo(a)anthracene	4.0E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	1.E-07	1.8E-07	mg/kg/day	NA	mg/kg/day	NA
		Sediment Area 1A		Benzo(a)pyrene	3.4E+00	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	9.E-07	1.5E-07	mg/kg/day	NA	mg/kg/day	NA
		(Swimming Scenario)		Benzo(b)fluoranthene	2.8E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	7.E-08	1.2E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	1.2E+00	mg/kg	1.8E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.3E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	3.0E+00	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	8.E-09	1.3E-07	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	3.5E+00	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	9.E-10	1.5E-07	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	5.5E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	1.E-07	2.4E-08	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	1.7E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	4.E-08	7.5E-08	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	2.1E+00	mg/kg	3.2E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	9.2E-08	mg/kg/day	2.0E-02	mg/kg/day	5.E-06
				Arsenic	1.7E+01	mg/kg	1.5E-07	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	2.E-07	4.4E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Barium	4.2E+01	mg/kg	6.3E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.8E-06	mg/kg/day	2.0E-01	mg/kg/day	9.E-06
				Cadmium	8.1E+01	mg/kg	1.2E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.5E-06	mg/kg/day	1.0E-03	mg/kg/day	4.E-03
				Lead	2.7E+02	mg/kg	4.1E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.2E-05	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								1.E-06					5.E-03
			Dermal													
				Benzo(a)anthracene	4.0E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	5.E-07	8.2E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	3.4E+00	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	4.E-06	7.0E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	2.8E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	3.E-07	5.7E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	1.2E+00	mg/kg	8.4E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.5E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	3.0E+00	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	4.E-08	6.2E-07	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	3.5E+00	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	4.E-09	7.2E-07	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	5.5E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	7.E-07	1.1E-07	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	1.7E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	2.E-07	3.5E-07	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	2.1E+00	mg/kg	1.5E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.3E-07	mg/kg/day	2.0E-02	mg/kg/day	2.E-05
				Arsenic	1.7E+01	mg/kg	2.7E-07	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	4.E-07	8.0E-07	mg/kg/day	3.0E-04	mg/kg/day	3.E-03
				Barium	4.2E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.4E-02	mg/kg/day	NA
				Cadmium	8.1E+01	mg/kg	4.4E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.3E-07	mg/kg/day	2.5E-05	mg/kg/day	5.E-03
				Lead	2.7E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								6.E-06					8.E-03
		Exposure Point Total									8.E-06					1.E-02
	Exposure Medium Total										8.E-06					1.E-02
Sediment Soil Total											8.E-06					1.E-02
Surface Water	Surface Water	DePue Lake	Ingestion													
		Surface Water		Cadmium	3.5E-03	mg/L	1.3E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.8E-08	mg/kg/day	5.0E-04	mg/kg/day	8.E-05
		Eastern Portion of		Lead	2.0E-02	mg/L	7.5E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.2E-07	mg/kg/day	NA	mg/kg/day	NA
		Lake		Manganese	3.8E-01	mg/L	1.4E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.1E-06	mg/kg/day	2.4E-02	mg/kg/day	2.E-04
		(Swimming Scenario)		Ammonia	7.3E-01	mg/L	2.7E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	8.0E-06	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.6E+02	mg/L	5.9E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.7E-03	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	1.3E+01	mg/L	4.8E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.4E-04	mg/kg/day	1.6E+00	mg/kg/day	9.E-05
				Phosphorus	2.7E+00	mg/L	1.0E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.9E-05	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					3.E-04

Table 7.5A.RME
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor: Village Park Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Water	Surface Water	DePue Lake Surface Water Eastern Portion of Lake (Swimming Scenario)	Dermal	Cadmium	3.5E-06	mg/cm^3	2.4E-08	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	6.9E-08	mg/kg/day	1.3E-05	mg/kg/day	5.E-03
				Lead	2.0E-05	mg/cm^3	NA	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	3.8E-04	mg/cm^3	2.5E-06	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	7.4E-06	mg/kg/day	9.6E-04	mg/kg/day	8.E-03
				Ammonia	7.3E-04	mg/cm^3	NA	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.6E-01	mg/cm^3	NA	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	1.3E-02	mg/cm^3	NA	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	NA	mg/kg/day	1.6E+00	mg/kg/day	NA
				Phosphorus	2.7E-03	mg/cm^3	NA	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					1.E-02
		Exposure Point Total									0.E+00					1.E-02
	Exposure Medium Total										0.E+00					1.E-02
Surface Water Total											0.E+00					1.E-02
Groundwater Seeps	Sediment	Seep Sediment Floodplain Area 1A (Wading Scenario)	Ingestion	Arsenic	9.6E+00	mg/kg	1.3E-07	mg/kg/day	1.5E+00	(mg/kg/day)$^{-1}$	2.E-07	3.8E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
			Exp. Route Total								2.E-07					1.E-03
			Dermal	Arsenic	9.6E+00	mg/kg	7.4E-08	mg/kg/day	1.5E+00	(mg/kg/day)$^{-1}$	1.E-07	2.2E-07	mg/kg/day	3.0E-04	mg/kg/day	7.E-04
			Exp. Route Total								1.E-07					7.E-04
		Exposure Point Total									3.E-07					2.E-03
	Exposure Medium Total										3.E-07					2.E-03
Groundwater Seep Sediment Total											3.E-07					2.E-03
Groundwater Seeps	Surface Water	Seep Surface Water Floodplain Area 1A (Wading Scenario)	Ingestion	Manganese	4.0E-01	mg/L	1.5E-06	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	4.4E-06	mg/kg/day	2.4E-02	mg/kg/day	2.E-04
				Ammonia	5.1E-01	mg/L	1.9E-06	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	5.6E-06	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					2.E-04
			Dermal	Manganese	4.0E-04	mg/cm^3	8.6E-07	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	2.5E-06	mg/kg/day	9.6E-04	mg/kg/day	3.E-03
				Ammonia	5.1E-04	mg/cm^3	NA	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					3.E-03
		Exposure Point Total									0.E+00					3.E-03
	Exposure Medium Total										0.E+00					3.E-03
Groundwater Seep Surface Water Total											0.E+00					3.E-03
										Total of Receptor Risks Across All Media	8.E-06			Total of Receptor Hazards Across All Media		3.E-02

Note:

NA = Not available

-- = Consituent is a mutagen, intakes/risk calculations are detailed in Appendix F.

Table 7.5A.CTE
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor: Village Park Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Sediment	Sediment	DePue Lake	Ingestion													
		Surface Sediment		Benzo(a)anthracene	4.0E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	1.E-08	4.4E-08	mg/kg/day	NA	mg/kg/day	NA
		Sediment Area 1A		Benzo(a)pyrene	3.4E+00	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	1.E-07	3.7E-08	mg/kg/day	NA	mg/kg/day	NA
		(Swimming Scenario)		Benzo(b)fluoranthene	2.8E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	1.E-08	3.1E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	1.2E+00	mg/kg	1.7E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.3E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	3.0E+00	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	1.E-09	3.3E-08	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	3.5E+00	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	1.E-10	3.8E-08	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	5.5E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	2.E-08	6.0E-09	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	1.7E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	6.E-09	1.9E-08	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	2.1E+00	mg/kg	3.0E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.3E-08	mg/kg/day	2.0E-02	mg/kg/day	1.E-06
				Arsenic	1.7E+01	mg/kg	1.4E-08	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	2.E-08	1.1E-07	mg/kg/day	3.0E-04	mg/kg/day	4.E-04
				Barium	4.2E+01	mg/kg	5.9E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.6E-07	mg/kg/day	2.0E-01	mg/kg/day	2.E-06
				Cadmium	8.1E+01	mg/kg	1.1E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	8.9E-07	mg/kg/day	1.0E-03	mg/kg/day	9.E-04
				Lead	2.7E+02	mg/kg	3.8E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.0E-06	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								2.E-07					1.E-03
			Dermal													
				Benzo(a)anthracene	4.0E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	3.E-08	8.2E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	3.4E+00	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	2.E-07	7.0E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	2.8E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	2.E-08	5.7E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	1.2E+00	mg/kg	3.2E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.5E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	3.0E+00	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	2.E-09	6.2E-08	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	3.5E+00	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	2.E-10	7.2E-08	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	5.5E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	4.E-08	1.1E-08	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	1.7E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	1.E-08	3.5E-08	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	2.1E+00	mg/kg	5.5E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.3E-08	mg/kg/day	2.0E-02	mg/kg/day	2.E-06
				Arsenic	1.7E+01	mg/kg	3.3E-09	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	5.E-09	8.0E-08	mg/kg/day	3.0E-04	mg/kg/day	3.E-04
				Barium	4.2E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.4E-02	mg/kg/day	NA
				Cadmium	8.1E+01	mg/kg	5.2E-10	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.3E-08	mg/kg/day	2.5E-05	mg/kg/day	5.E-04
				Lead	2.7E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								3.E-07					8.E-04
		Exposure Point Total									5.E-07					2.E-03
	Exposure Medium Total										5.E-07					2.E-03
Sediment Soil Total											5.E-07					2.E-03
Surface Water	Surface Water	DePue Lake	Ingestion													
		Surface Water		Cadmium	3.5E-03	mg/L	2.5E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.9E-08	mg/kg/day	5.0E-04	mg/kg/day	4.E-05
		Eastern Portion of		Lead	2.0E-02	mg/L	1.4E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.1E-07	mg/kg/day	NA	mg/kg/day	NA
		Lake		Manganese	3.8E-01	mg/L	2.6E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.1E-06	mg/kg/day	2.4E-02	mg/kg/day	9.E-05
		(Swimming Scenario)		Ammonia	7.3E-01	mg/L	5.1E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.0E-06	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.6E+02	mg/L	1.1E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	8.6E-04	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	1.3E+01	mg/L	9.0E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.0E-05	mg/kg/day	1.6E+00	mg/kg/day	4.E-05
				Phosphorus	2.7E+00	mg/L	1.9E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.5E-05	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					2.E-04

Table 7.5A.CTE
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor: Village Park Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk			Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units	Cancer Risk	Value	Units	Value	Units	
Surface Water	Surface Water	DePue Lake	Dermal													
		Surface Water		Cadmium	3.5E-06	mg/cm^3	4.4E-09	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	3.4E-08	mg/kg/day	1.3E-05	mg/kg/day	3.E-03
		Eastern Portion of		Lead	2.0E-05	mg/cm^3	NA	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
		Lake		Manganese	3.8E-04	mg/cm^3	4.8E-07	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	3.7E-06	mg/kg/day	9.6E-04	mg/kg/day	4.E-03
		(Swimming Scenario)		Ammonia	7.3E-04	mg/cm^3	NA	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.6E-01	mg/cm^3	NA	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	1.3E-02	mg/cm^3	NA	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	NA	mg/kg/day	1.6E+00	mg/kg/day	NA
				Phosphorus	2.7E-03	mg/cm^3	NA	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					7.E-03
		Exposure Point Total									0.E+00					7.E-03
	Exposure Medium Total										0.E+00					7.E-03
Surface Water Total											0.E+00					7.E-03
Groundwater Seeps	Sediment	Seep Sediment	Ingestion													
		Floodplain Area 1A		Arsenic	9.6E+00	mg/kg	1.2E-08	mg/kg/day	1.5E+00	(mg/kg/day)$^{-1}$	2.E-08	9.5E-08	mg/kg/day	3.0E-04	mg/kg/day	3.E-04
		(Wading Scenario)	Exp. Route Total								2.E-08					3.E-04
			Dermal													
				Arsenic	9.6E+00	mg/kg	2.8E-09	mg/kg/day	1.5E+00	(mg/kg/day)$^{-1}$	4.E-09	2.2E-08	mg/kg/day	3.0E-04	mg/kg/day	7.E-05
			Exp. Route Total								4.E-09					7.E-05
		Exposure Point Total									2.E-08					4.E-04
	Exposure Medium Total										2.E-08					4.E-04
Groundwater Seep Sediment Total											2.E-08					4.E-04
Groundwater Seeps	Surface Water	Seep Surface Water	Ingestion													
		Floodplain Area 1A		Manganese	4.0E-01	mg/L	2.8E-07	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	2.2E-06	mg/kg/day	2.4E-02	mg/kg/day	9.E-05
		(Wading Scenario)		Ammonia	5.1E-01	mg/L	3.6E-07	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	2.8E-06	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					9.E-05
			Dermal													
				Manganese	4.0E-04	mg/cm^3	1.6E-07	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	1.3E-06	mg/kg/day	9.6E-04	mg/kg/day	1.E-03
				Ammonia	5.1E-04	mg/cm^3	NA	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					1.E-03
		Exposure Point Total									0.E+00					1.E-03
	Exposure Medium Total										0.E+00					1.E-03
Groundwater Seep Surface Water Total											0.E+00					1.E-03
										Total of Receptor Risks Across All Media	5.E-07				Total of Receptor Hazards Across All Media	1.E-02

Notes:

NA = Not available

-- = Consituent is a mutagen, intakes/risk calculations are detailed in Appendix F.

Table 7.6.RME
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor: Village Park Recreational User
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Sediment	Sediment	DePue Lake Sediment Sediment Area 1A (Wading Scenario)	Ingestion													
				Benzo(a)anthracene	4.0E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	7.E-07	1.6E-06	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	3.4E+00	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	6.E-06	1.4E-06	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	2.8E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	5.E-07	1.1E-06	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	1.2E+00	mg/kg	4.2E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.9E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	3.0E+00	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	6.E-08	1.2E-06	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	3.5E+00	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	6.E-09	1.4E-06	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	5.5E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	1.E-06	2.3E-07	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	1.7E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	3.E-07	7.0E-07	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	2.1E+00	mg/kg	7.4E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	8.6E-07	mg/kg/day	2.0E-02	mg/kg/day	4.E-05
				Arsenic	1.7E+01	mg/kg	3.6E-07	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	5.E-07	4.2E-06	mg/kg/day	3.0E-04	mg/kg/day	1.E-02
				Barium	4.2E+01	mg/kg	1.5E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.7E-05	mg/kg/day	2.0E-01	mg/kg/day	9.E-05
				Cadmium	8.1E+01	mg/kg	2.8E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.3E-05	mg/kg/day	1.0E-03	mg/kg/day	3.E-02
				Lead	2.7E+02	mg/kg	9.5E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.1E-04	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								9.E-06					5.E-02
			Dermal													
				Benzo(a)anthracene	4.0E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	2.E-07	5.2E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	3.4E+00	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	2.E-06	4.4E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	2.8E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	2.E-07	3.6E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	1.2E+00	mg/kg	1.3E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.6E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	3.0E+00	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	2.E-08	3.9E-07	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	3.5E+00	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	2.E-09	4.5E-07	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	5.5E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	3.E-07	7.1E-08	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	1.7E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	1.E-07	2.2E-07	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	2.1E+00	mg/kg	2.3E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.7E-07	mg/kg/day	2.0E-02	mg/kg/day	1.E-05
				Arsenic	1.7E+01	mg/kg	4.3E-08	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	7.E-08	5.1E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				Barium	4.2E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.4E-02	mg/kg/day	NA
				Cadmium	8.1E+01	mg/kg	6.9E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	8.1E-08	mg/kg/day	2.5E-05	mg/kg/day	3.E-03
				Lead	2.7E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								3.E-06					5.E-03
		Exposure Point Total									1.E-05					5.E-02
	Exposure Medium Total										1.E-05					5.E-02
Sediment Soil Total											1.E-05					5.E-02
Surface Water	Surface Water	DePue Lake Surface Water Eastern Portion of Lake (Wading Scenario)	Ingestion													
				Cadmium	3.5E-03	mg/L	1.5E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.8E-07	mg/kg/day	5.0E-04	mg/kg/day	4.E-04
				Lead	2.0E-02	mg/L	8.8E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.0E-06	mg/kg/day	NA	mg/kg/day	NA
				Manganese	3.8E-01	mg/L	1.6E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.9E-05	mg/kg/day	2.4E-02	mg/kg/day	8.E-04
				Ammonia	7.3E-01	mg/L	3.2E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.7E-05	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.6E+02	mg/L	6.9E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	8.0E-03	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	1.3E+01	mg/L	5.6E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	6.6E-04	mg/kg/day	1.6E+00	mg/kg/day	4.E-04
				Phosphorus	2.7E+00	mg/L	1.2E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.4E-04	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					2.E-03

Table 7.6.RME
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor: Village Park Recreational User
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface Water	Surface Water	DePue Lake	Dermal													
		Surface Water		Cadmium	3.5E-06	mg/cm^3	3.7E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.4E-08	mg/kg/day	1.3E-05	mg/kg/day	3.E-03
		Eastern Portion of		Lead	2.0E-05	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
		Lake		Manganese	3.8E-04	mg/cm^3	4.0E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.7E-06	mg/kg/day	9.6E-04	mg/kg/day	5.E-03
		(Wading Scenario)		Ammonia	7.3E-04	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.6E-01	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	1.3E-02	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.6E+00	mg/kg/day	NA
				Phosphorus	2.7E-03	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					8.E-03
		Exposure Point Total									0.E+00					1.E-02
	Exposure Medium Total										0.E+00					1.E-02
Surface Water Total											0.E+00					1.E-02
Groundwater Seeps	Sediment	Sediment	Ingestion													
		Floodplain Area 1A		Arsenic	9.6E+00	mg/kg	3.0E-07	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	5.E-07	3.5E-06	mg/kg/day	3.0E-04	mg/kg/day	1.E-02
		(Wading Scenario)	Exp. Route Total								5.E-07					1.E-02
			Dermal													
				Arsenic	9.6E+00	mg/kg	3.7E-08	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	6.E-08	2.9E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
			Exp. Route Total								6.E-08					1.E-03
		Exposure Point Total									5.E-07					1.E-02
	Exposure Medium Total										5.E-07					1.E-02
Groundwater Seep Sediment Total											5.E-07					1.E-02
Groundwater Seeps	Surface Water	Surface Water	Ingestion													
		Floodplain Area 1A		Manganese	4.0E-01	mg/L	1.8E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.1E-05	mg/kg/day	2.4E-02	mg/kg/day	9.E-04
		(Wading Scenario)		Ammonia	5.1E-01	mg/L	2.2E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.6E-05	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					9.E-04
			Dermal													
				Manganese	4.0E-04	mg/cm^3	4.3E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.0E-06	mg/kg/day	9.6E-04	mg/kg/day	5.E-03
				Ammonia	5.1E-04	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					5.E-03
		Exposure Point Total									0.E+00					6.E-03
	Exposure Medium Total										0.E+00					6.E-03
Groundwater Seep Surface Water Total											0.E+00					6.E-03
										Total of Receptor Risks Across All Media	1.E-05			Total of Receptor Hazards Across All Media		8.E-02

Note:

NA = Not available

-- = Consituent is a mutagen, intakes/risk calculations are detailed in Appendix F.

Table 7.6.CTE
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor: Village Park Recreational User
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk			Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units	Cancer Risk	Value	Units	Value	Units	
Sediment	Sediment	DePue Lake Sediment Sediment Area 1A (Wading Scenario)	Ingestion													
				Benzo(a)anthracene	4.0E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	2.E-07	4.1E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	3.4E+00	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	2.E-06	3.5E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	2.8E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	1.E-07	2.9E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	1.2E+00	mg/kg	1.1E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.2E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	3.0E+00	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	1.E-08	3.1E-07	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	3.5E+00	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	2.E-09	3.6E-07	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	5.5E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	3.E-07	5.6E-08	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	1.7E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	8.E-08	1.7E-07	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	2.1E+00	mg/kg	1.8E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.1E-07	mg/kg/day	2.0E-02	mg/kg/day	1.E-05
				Arsenic	1.7E+01	mg/kg	8.9E-08	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	1.E-07	1.0E-06	mg/kg/day	3.0E-04	mg/kg/day	3.E-03
				Barium	4.2E+01	mg/kg	3.7E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.3E-06	mg/kg/day	2.0E-01	mg/kg/day	2.E-05
				Cadmium	8.1E+01	mg/kg	7.1E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	8.3E-06	mg/kg/day	1.0E-03	mg/kg/day	8.E-03
				Lead	2.7E+02	mg/kg	2.4E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.8E-05	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								2.E-06					1.E-02
			Dermal													
				Benzo(a)anthracene	4.0E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	1.E-10	5.2E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	3.4E+00	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	1.E-09	4.4E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	2.8E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	1.E-10	3.6E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	1.2E+00	mg/kg	1.3E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.6E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	3.0E+00	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	1.E-11	3.9E-08	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	3.5E+00	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	1.E-12	4.5E-08	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	5.5E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	2.E-10	7.1E-09	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	1.7E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	6.E-11	2.2E-08	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	2.1E+00	mg/kg	2.3E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.7E-08	mg/kg/day	2.0E-02	mg/kg/day	1.E-06
				Arsenic	1.7E+01	mg/kg	4.3E-09	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	7.E-09	5.1E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Barium	4.2E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.4E-02	mg/kg/day	NA
				Cadmium	8.1E+01	mg/kg	6.9E-10	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	8.1E-09	mg/kg/day	2.5E-05	mg/kg/day	3.E-04
				Lead	2.7E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								8.E-09					5.E-04
		Exposure Point Total									2.E-06					1.E-02
	Exposure Medium Total										2.E-06					1.E-02
Sediment Soil Total											2.E-06					1.E-02
Surface Water	Surface Water	DePue Lake Surface Water Eastern Portion of Lake (Wading Scenario)	Ingestion													
				Cadmium	3.5E-03	mg/L	7.6E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	8.9E-08	mg/kg/day	5.0E-04	mg/kg/day	2.E-04
				Lead	2.0E-02	mg/L	4.4E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.1E-07	mg/kg/day	NA	mg/kg/day	NA
				Manganese	3.8E-01	mg/L	8.2E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	9.6E-06	mg/kg/day	2.4E-02	mg/kg/day	4.E-04
				Ammonia	7.3E-01	mg/L	1.6E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.9E-05	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.6E+02	mg/L	3.4E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.0E-03	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	1.3E+01	mg/L	2.8E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.3E-04	mg/kg/day	1.6E+00	mg/kg/day	2.E-04
				Phosphorus	2.7E+00	mg/L	5.9E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	6.8E-05	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					8.E-04

Table 7.6.CTE
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor: Village Park Recreational User
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk			Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units	Cancer Risk	Value	Units	Value	Units	
Surface Water	Surface Water	DePue Lake	Dermal													
		Surface Water		Cadmium	3.5E-06	mg/cm^3	1.9E-09	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	2.2E-08	mg/kg/day	1.3E-05	mg/kg/day	2.E-03
		Eastern Portion of		Lead	2.0E-05	mg/cm^3	NA	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
		Lake		Manganese	3.8E-04	mg/cm^3	2.0E-07	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	2.3E-06	mg/kg/day	9.6E-04	mg/kg/day	2.E-03
		(Wading Scenario)		Ammonia	7.3E-04	mg/cm^3	NA	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.6E-01	mg/cm^3	NA	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	1.3E-02	mg/cm^3	NA	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	NA	mg/kg/day	1.6E+00	mg/kg/day	NA
				Phosphorus	2.7E-03	mg/cm^3	NA	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					4.E-03
		Exposure Point Total									0.E+00					5.E-03
	Exposure Medium Total										0.E+00					5.E-03
Surface Water Total											0.E+00					5.E-03
Groundwater Seeps	Sediment	Sediment	Ingestion													
		Floodplain Area 1A		Arsenic	9.6E+00	mg/kg	7.6E-08	mg/kg/day	1.5E+00	(mg/kg/day)$^{-1}$	1.E-07	8.8E-07	mg/kg/day	3.0E-04	mg/kg/day	3.E-03
		(Wading Scenario)	Exp. Route Total								1.E-07					3.E-03
			Dermal													
				Arsenic	9.6E+00	mg/kg	3.7E-09	mg/kg/day	1.5E+00	(mg/kg/day)$^{-1}$	6.E-09	4.3E-08	mg/kg/day	3.0E-04	mg/kg/day	1.E-04
			Exp. Route Total								6.E-09					1.E-04
		Exposure Point Total									1.E-07					3.E-03
	Exposure Medium Total										1.E-07					3.E-03
Groundwater Seep Sediment Total											1.E-07					3.E-03
Groundwater Seeps	Surface Water	Surface Water	Ingestion													
		Floodplain Area 1A		Manganese	4.0E-01	mg/L	8.8E-07	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	1.0E-05	mg/kg/day	2.4E-02	mg/kg/day	4.E-04
		(Wading Scenario)		Ammonia	5.1E-01	mg/L	1.1E-06	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	1.3E-05	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					4.E-04
			Dermal													
				Manganese	4.0E-04	mg/cm^3	2.1E-07	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	2.5E-06	mg/kg/day	9.6E-04	mg/kg/day	3.E-03
				Ammonia	5.1E-04	mg/cm^3	NA	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					3.E-03
		Exposure Point Total									0.E+00					3.E-03
	Exposure Medium Total										0.E+00					3.E-03
Groundwater Seep Surface Water Total											0.E+00					3.E-03
										Total of Receptor Risks Across All Media	2.E-06			Total of Receptor Hazards Across All Media		2.E-02

Note:

NA = Not available

-- = Consituent is a mutagen, intakes/risk calculations are detailed in Appendix F.

Table 7.6A.RME
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor: Village Park Recreational User
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk			Intake/Exposure Concentration		RfD/RfC		
					Value	Units	Value	Units	Value	Units	Cancer Risk	Value	Units	Value	Units	Hazard Quotient
Sediment	Sediment	DePue Lake Sediment Area 1A (Swimming Scenario)	Ingestion													
				Benzo(a)anthracene	4.0E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	7.E-07	1.6E-06	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	3.4E+00	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	6.E-06	1.4E-06	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	2.8E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	5.E-07	1.1E-06	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	1.2E+00	mg/kg	4.2E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.9E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	3.0E+00	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	6.E-08	1.2E-06	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	3.5E+00	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	6.E-09	1.4E-06	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	5.5E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	1.E-06	2.3E-07	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	1.7E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	3.E-07	7.0E-07	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	2.1E+00	mg/kg	7.4E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	8.6E-07	mg/kg/day	2.0E-02	mg/kg/day	4.E-05
				Arsenic	1.7E+01	mg/kg	3.6E-07	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	5.E-07	4.2E-06	mg/kg/day	3.0E-04	mg/kg/day	1.E-02
				Barium	4.2E+01	mg/kg	1.5E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.7E-05	mg/kg/day	2.0E-01	mg/kg/day	9.E-05
				Cadmium	8.1E+01	mg/kg	2.8E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.3E-05	mg/kg/day	1.0E-03	mg/kg/day	3.E-02
				Lead	2.7E+02	mg/kg	9.5E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.1E-04	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								9.E-06					5.E-02
			Dermal													
				Benzo(a)anthracene	4.0E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	6.E-07	1.4E-06	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	3.4E+00	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	5.E-06	1.2E-06	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	2.8E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	4.E-07	9.8E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	1.2E+00	mg/kg	3.6E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.2E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	3.0E+00	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	5.E-08	1.1E-06	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	3.5E+00	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	6.E-09	1.2E-06	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	5.5E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	9.E-07	1.9E-07	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	1.7E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	3.E-07	6.0E-07	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	2.1E+00	mg/kg	6.3E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.4E-07	mg/kg/day	2.0E-02	mg/kg/day	4.E-05
				Arsenic	1.7E+01	mg/kg	1.2E-07	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	2.E-07	1.4E-06	mg/kg/day	3.0E-04	mg/kg/day	5.E-03
				Barium	4.2E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.4E-02	mg/kg/day	NA
				Cadmium	8.1E+01	mg/kg	1.9E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.2E-07	mg/kg/day	2.5E-05	mg/kg/day	9.E-03
				Lead	2.7E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								8.E-06					1.E-02
		Exposure Point Total									2.E-05					6.E-02
	Exposure Medium Total										2.E-05					6.E-02
Sediment Soil Total											2.E-05					6.E-02
Surface Water	Surface Water	DePue Lake Surface Water Eastern Portion of Lake (Swimming Scenario)	Ingestion													
				Cadmium	3.5E-03	mg/L	1.5E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.8E-07	mg/kg/day	5.0E-04	mg/kg/day	4.E-04
				Lead	2.0E-02	mg/L	8.8E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.0E-06	mg/kg/day	NA	mg/kg/day	NA
				Manganese	3.8E-01	mg/L	1.6E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.9E-05	mg/kg/day	2.4E-02	mg/kg/day	8.E-04
				Ammonia	7.3E-01	mg/L	3.2E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.7E-05	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.6E+02	mg/L	6.9E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	8.0E-03	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	1.3E+01	mg/L	5.6E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	6.6E-04	mg/kg/day	1.6E+00	mg/kg/day	4.E-04
				Phosphorus	2.7E+00	mg/L	1.2E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.4E-04	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					2.E-03

Table 7.6A.RME
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor: Village Park Recreational User
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk			Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units	Cancer Risk	Value	Units	Value	Units	
Surface Water	Surface Water	DePue Lake	Dermal													
		Surface Water		Cadmium	3.5E-06	mg/cm^3	1.0E-08	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	1.2E-07	mg/kg/day	1.3E-05	mg/kg/day	9.E-03
		Eastern Portion of		Lead	2.0E-05	mg/cm^3	NA	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
		Lake		Manganese	3.8E-04	mg/cm^3	1.1E-06	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	1.3E-05	mg/kg/day	9.6E-04	mg/kg/day	1.E-02
		(Swimming Scenario)		Ammonia	7.3E-04	mg/cm^3	NA	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.6E-01	mg/cm^3	NA	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	1.3E-02	mg/cm^3	NA	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	NA	mg/kg/day	1.6E+00	mg/kg/day	NA
				Phosphorus	2.7E-03	mg/cm^3	NA	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					2.E-02
		Exposure Point Total									0.E+00					2.E-02
	Exposure Medium Total										0.E+00					2.E-02
Surface Water Total											0.E+00					2.E-02
Groundwater Seeps	Sediment	Sediment	Ingestion													
		Floodplain Area 1A		Arsenic	9.6E+00	mg/kg	3.0E-07	mg/kg/day	1.5E+00	(mg/kg/day)$^{-1}$	5.E-07	3.5E-06	mg/kg/day	3.0E-04	mg/kg/day	1.E-02
		(Wading Scenario)	Exp. Route Total								5.E-07					1.E-02
			Dermal													
				Arsenic	9.6E+00	mg/kg	3.7E-08	mg/kg/day	1.5E+00	(mg/kg/day)$^{-1}$	6.E-08	2.9E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
			Exp. Route Total								6.E-08					1.E-03
		Exposure Point Total									5.E-07					1.E-02
	Exposure Medium Total										5.E-07					1.E-02
Groundwater Seep Sediment Total											5.E-07					1.E-02
Groundwater Seeps	Surface Water	Surface Water	Ingestion													
		Floodplain Area 1A		Manganese	4.0E-01	mg/L	1.8E-06	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	2.1E-05	mg/kg/day	2.4E-02	mg/kg/day	9.E-04
		(Wading Scenario)		Ammonia	5.1E-01	mg/L	2.2E-06	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	2.6E-05	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					9.E-04
			Dermal													
				Manganese	4.0E-04	mg/cm^3	4.3E-07	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	5.0E-06	mg/kg/day	9.6E-04	mg/kg/day	5.E-03
				Ammonia	5.1E-04	mg/cm^3	NA	mg/kg/day	NA	(mg/kg/day)$^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					5.E-03
		Exposure Point Total									0.E+00					6.E-03
	Exposure Medium Total										0.E+00					6.E-03
Groundwater Seep Surface Water Total											0.E+00					6.E-03
										Total of Receptor Risks Across All Media	2.E-05			Total of Receptor Hazards Across All Media		1.E-01

Note:

NA = Not available

-- = Consituent is a mutagen, intakes/risk calculations are detailed in Appendix F.

Table 7.6A.CTE
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor: Village Park Recreational User
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk			Intake/Exposure Concentration		RfD/RfC		
					Value	Units	Value	Units	Value	Units	Cancer Risk	Value	Units	Value	Units	Hazard Quotient
Sediment	Sediment	DePue Lake Sediment Area 1A (Swimming Scenario)	Ingestion													
				Benzo(a)anthracene	4.0E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	2.E-07	4.1E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	3.4E+00	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	2.E-06	3.5E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	2.8E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	1.E-07	2.9E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	1.2E+00	mg/kg	1.1E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.2E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	3.0E+00	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	1.E-08	3.1E-07	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	3.5E+00	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	2.E-09	3.6E-07	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	5.5E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	3.E-07	5.6E-08	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	1.7E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	8.E-08	1.7E-07	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	2.1E+00	mg/kg	1.8E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.1E-07	mg/kg/day	2.0E-02	mg/kg/day	1.E-05
				Arsenic	1.7E+01	mg/kg	8.9E-08	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	1.E-07	1.0E-06	mg/kg/day	3.0E-04	mg/kg/day	3.E-03
				Barium	4.2E+01	mg/kg	3.7E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.3E-06	mg/kg/day	2.0E-01	mg/kg/day	2.E-05
				Cadmium	8.1E+01	mg/kg	7.1E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	8.3E-06	mg/kg/day	1.0E-03	mg/kg/day	8.E-03
				Lead	2.7E+02	mg/kg	2.4E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.8E-05	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								2.E-06					1.E-02
			Dermal													
				Benzo(a)anthracene	4.0E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	6.E-08	1.4E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	3.4E+00	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	5.E-07	1.2E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	2.8E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	4.E-08	9.8E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	1.2E+00	mg/kg	3.6E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.2E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	3.0E+00	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	5.E-09	1.1E-07	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	3.5E+00	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	6.E-10	1.2E-07	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	5.5E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	9.E-08	1.9E-08	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	1.7E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	3.E-08	6.0E-08	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	2.1E+00	mg/kg	6.3E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.4E-08	mg/kg/day	2.0E-02	mg/kg/day	4.E-06
				Arsenic	1.7E+01	mg/kg	1.2E-08	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	2.E-08	1.4E-07	mg/kg/day	3.0E-04	mg/kg/day	5.E-04
				Barium	4.2E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.4E-02	mg/kg/day	NA
				Cadmium	8.1E+01	mg/kg	1.9E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.2E-08	mg/kg/day	2.5E-05	mg/kg/day	9.E-04
				Lead	2.7E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								8.E-07					1.E-03
		Exposure Point Total									3.E-06					1.E-02
	Exposure Medium Total										3.E-06					1.E-02
Sediment Soil Total											3.E-06					1.E-02
Surface Water	Surface Water	DePue Lake Surface Water Eastern Portion of Lake (Swimming Scenario)	Ingestion													
				Cadmium	3.5E-03	mg/L	7.6E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	8.9E-08	mg/kg/day	5.0E-04	mg/kg/day	2.E-04
				Lead	2.0E-02	mg/L	4.4E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.1E-07	mg/kg/day	NA	mg/kg/day	NA
				Manganese	3.8E-01	mg/L	8.2E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	9.6E-06	mg/kg/day	2.4E-02	mg/kg/day	4.E-04
				Ammonia	7.3E-01	mg/L	1.6E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.9E-05	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.6E+02	mg/L	3.4E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.0E-03	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	1.3E+01	mg/L	2.8E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.3E-04	mg/kg/day	1.6E+00	mg/kg/day	2.E-04
				Phosphorus	2.7E+00	mg/L	5.9E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	6.8E-05	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					8.E-04

Table 7.6A.CTE
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor: Village Park Recreational User
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Water	Surface Water	DePue Lake Surface Water Eastern Portion of Lake (Swimming Scenario)	Dermal													
				Cadmium	3.5E-06	mg/cm^3	1.9E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.9E-08	mg/kg/day	1.3E-05	mg/kg/day	5.E-03
				Lead	2.0E-05	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	3.8E-04	mg/cm^3	5.4E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	6.3E-06	mg/kg/day	9.6E-04	mg/kg/day	7.E-03
				Ammonia	7.3E-04	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.6E-01	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	1.3E-02	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.6E+00	mg/kg/day	NA
				Phosphorus	2.7E-03	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					1.E-02
		Exposure Point Total									0.E+00					1.E-02
	Exposure Medium Total										0.E+00					1.E-02
Surface Water Total											0.E+00					1.E-02
Groundwater Seeps	Sediment	Sediment Floodplain Area 1A (Wading Scenario)	Ingestion	Arsenic	9.6E+00	mg/kg	7.6E-08	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	1.E-07	8.8E-07	mg/kg/day	3.0E-04	mg/kg/day	3.E-03
			Exp. Route Total								1.E-07					3.E-03
			Dermal	Arsenic	9.6E+00	mg/kg	3.7E-09	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	6.E-09	4.3E-08	mg/kg/day	3.0E-04	mg/kg/day	1.E-04
			Exp. Route Total								6.E-09					1.E-04
		Exposure Point Total									1.E-07					3.E-03
	Exposure Medium Total										1.E-07					3.E-03
Groundwater Seep Sediment Total											1.E-07					3.E-03
Groundwater Seeps	Surface Water	Surface Water Floodplain Area 1A (Wading Scenario)	Ingestion	Manganese	4.0E-01	mg/L	8.8E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.0E-05	mg/kg/day	2.4E-02	mg/kg/day	4.E-04
				Ammonia	5.1E-01	mg/L	1.1E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.3E-05	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					4.E-04
			Dermal	Manganese	4.0E-04	mg/cm^3	2.1E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.5E-06	mg/kg/day	9.6E-04	mg/kg/day	3.E-03
				Ammonia	5.1E-04	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					3.E-03
		Exposure Point Total									0.E+00					3.E-03
	Exposure Medium Total										0.E+00					3.E-03
Groundwater Seep Surface Water Total											0.E+00					3.E-03
										Total of Receptor Risks Across All Media	3.E-06			Total of Receptor Hazards Across All Media		3.E-02

Note:

NA = Not available

-- = Consituent is a mutagen, intakes/risk calculations are detailed in Appendix F.

Table 7.7.RME
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor: Recreational Boater
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Sediment	Sediment	DePue Lake	Ingestion													
		Surface Sediment		Benzo(a)anthracene	1.9E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	6.E-09	9.7E-09	mg/kg/day	NA	mg/kg/day	NA
		Lake-wide		Benzo(a)pyrene	1.6E+00	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	5.E-07	8.4E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	2.4E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	7.E-09	4.2E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	2.4E-01	mg/kg	4.2E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.2E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	1.5E+00	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	4.E-09	2.6E-08	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	1.7E+00	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	5.E-10	3.0E-08	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	2.7E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	8.E-08	1.4E-08	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	8.6E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	3.E-08	1.5E-08	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	1.6E+00	mg/kg	2.9E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.9E-08	mg/kg/day	2.0E-02	mg/kg/day	1.E-06
				Gamma-BHC (Lindane)	3.4E+01	mg/kg	5.9E-07	mg/kg/day	1.1E+00	$(mg/kg/day)^{-1}$	7.E-07	5.9E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				Arsenic	1.8E+01	mg/kg	1.9E-07	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	3.E-07	5.6E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				Barium	4.6E+02	mg/kg	8.1E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.4E-05	mg/kg/day	2.0E-01	mg/kg/day	1.E-04
				Cadmium	1.0E+02	mg/kg	1.7E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.1E-06	mg/kg/day	1.0E-03	mg/kg/day	5.E-03
				Cobalt	2.0E+01	mg/kg	3.5E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.0E-06	mg/kg/day	3.0E-04	mg/kg/day	3.E-03
				Copper	7.2E+02	mg/kg	1.3E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.7E-05	mg/kg/day	4.0E-02	mg/kg/day	9.E-04
				Iron	2.7E+04	mg/kg	4.8E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.4E-03	mg/kg/day	7.0E-01	mg/kg/day	2.E-03
				Lead	3.2E+02	mg/kg	5.5E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.6E-05	mg/kg/day	NA	mg/kg/day	NA
				Manganese	8.3E+02	mg/kg	1.4E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.2E-05	mg/kg/day	1.4E-01	mg/kg/day	3.E-04
				Mercury	2.7E+00	mg/kg	4.7E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.4E-07	mg/kg/day	1.0E-04	mg/kg/day	1.E-03
				Zinc	7.3E+03	mg/kg	1.3E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.7E-04	mg/kg/day	3.0E-01	mg/kg/day	1.E-03
			Exp. Route Total								2.E-06					2.E-02
			Dermal													
				Benzo(a)anthracene	1.9E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	9.E-09	1.4E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	1.6E+00	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	7.E-07	1.2E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	2.4E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	1.E-08	1.8E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	2.4E-01	mg/kg	6.3E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.8E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	1.5E+00	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	7.E-09	1.1E-07	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	1.7E+00	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	8.E-10	1.3E-07	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	2.7E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	1.E-07	2.1E-08	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	8.6E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	4.E-08	6.5E-08	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	1.6E+00	mg/kg	4.2E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.2E-07	mg/kg/day	2.0E-02	mg/kg/day	6.E-06
				Gamma-BHC (Lindane)	3.4E+01	mg/kg	2.7E-07	mg/kg/day	1.1E+00	$(mg/kg/day)^{-1}$	3.E-07	7.9E-07	mg/kg/day	3.0E-04	mg/kg/day	3.E-03
				Arsenic	1.8E+01	mg/kg	1.1E-07	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	2.E-07	3.2E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Barium	4.6E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.4E-02	mg/kg/day	NA
				Cadmium	1.0E+02	mg/kg	2.0E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.8E-08	mg/kg/day	2.5E-05	mg/kg/day	2.E-03
				Cobalt	2.0E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-04	mg/kg/day	NA
				Copper	7.2E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	4.0E-02	mg/kg/day	NA
				Iron	2.7E+04	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	7.0E-01	mg/kg/day	NA
				Lead	3.2E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	8.3E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	5.6E-03	mg/kg/day	NA
				Mercury	2.7E+00	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.0E-04	mg/kg/day	NA
				Zinc	7.3E+03	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-01	mg/kg/day	NA
			Exp. Route Total								1.E-06					6.E-03
		Exposure Point Total									3.E-06					2.E-02
	Exposure Medium Total										3.E-06					2.E-02
Sediment Soil Total											3.E-06					2.E-02

Table 7.7.RME
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor: Recreational Boater
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface Water	Surface Water	DePue Lake	Ingestion													
		Surface Water		Cadmium	3.5E-03	mg/L	6.1E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.8E-08	mg/kg/day	5.0E-04	mg/kg/day	4.E-05
		Lake-wide		Lead	1.7E-02	mg/L	2.9E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	8.6E-08	mg/kg/day	NA	mg/kg/day	NA
				Manganese	4.8E-01	mg/L	8.3E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.4E-06	mg/kg/day	2.4E-02	mg/kg/day	1.E-04
				Ammonia	2.2E+01	mg/L	3.9E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.1E-04	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.2E+02	mg/L	2.0E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	6.0E-04	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	7.4E+00	mg/L	1.3E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.8E-05	mg/kg/day	1.6E+00	mg/kg/day	2.E-05
				Phosphorus	1.2E+00	mg/L	2.1E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	6.3E-06	mg/kg/day	NA	mg/kg/day	NA
				Sulfate	3.3E+02	mg/L	5.7E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.7E-03	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					2.E-04
Surface Water	Surface Water	DePue Lake	Dermal													
		Surface Water		Cadmium	3.5E-06	mg/cm^3	3.5E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.0E-08	mg/kg/day	1.3E-05	mg/kg/day	8.E-04
		Lake-wide		Lead	1.7E-05	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	4.8E-04	mg/cm^3	4.8E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.4E-06	mg/kg/day	9.6E-04	mg/kg/day	1.E-03
				Ammonia	2.2E-02	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.2E-01	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	7.4E-03	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.6E+00	mg/kg/day	NA
				Phosphorus	1.2E-03	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Sulfate	3.3E-01	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					2.E-03
		Exposure Point Total									0.E+00					2.E-03
	Exposure Medium Total										0.E+00					2.E-03
Surface Water Total											0.E+00					2.E-03
Groundwater Seeps	Sediment	Seep Sediment Floodplain Area 1A	Ingestion	Arsenic	9.6E+00	mg/kg	1.0E-07	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	2.E-07	2.9E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
			Exp. Route Total								2.E-07					1.E-03
			Dermal	Arsenic	9.6E+00	mg/kg	5.7E-08	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	9.E-08	1.7E-07	mg/kg/day	3.0E-04	mg/kg/day	6.E-04
			Exp. Route Total								9.E-08					6.E-04
		Exposure Point Total									2.E-07					2.E-03
	Exposure Medium Total										2.E-07					2.E-03
Groundwater Seep Sediment Total											2.E-07					2.E-03
Groundwater Seeps	Surface Water	Seep Surface Water Floodplain Area 1A	Ingestion	Manganese	4.0E-01	mg/L	7.0E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.0E-06	mg/kg/day	2.4E-02	mg/kg/day	9.E-05
				Ammonia	5.1E-01	mg/L	8.9E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.6E-06	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					9.E-05
			Dermal	Manganese	4.0E-04	mg/cm^3	4.0E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.2E-06	mg/kg/day	9.6E-04	mg/kg/day	1.E-03
				Ammonia	5.1E-04	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					1.E-03
		Exposure Point Total									0.E+00					1.E-03
	Exposure Medium Total										0.E+00					1.E-03
Groundwater Seep Surface Water Total											0.E+00					1.E-03
										Total of Receptor Risks Across All Media	3.E-06					3.E-02

NA = Not available
-- = Consituent is a mutagen, intakes/risk calculations are detailed in Appendix F.

Table 7.7.CTE
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor: Recreational Boater
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Sediment	Sediment	DePue Lake Surface Sediment Lake-wide	Ingestion													
				Benzo(a)anthracene	1.9E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	8.E-10	2.4E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	1.6E+00	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	7.E-08	2.1E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	2.4E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	1.E-09	3.1E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	2.4E-01	mg/kg	4.0E-10	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.1E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	1.5E+00	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	6.E-10	1.9E-08	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	1.7E+00	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	7.E-11	2.2E-08	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	2.7E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	1.E-08	3.5E-09	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	8.6E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	4.E-09	1.1E-08	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	1.6E+00	mg/kg	2.7E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.1E-08	mg/kg/day	2.0E-02	mg/kg/day	1.E-06
				Gamma-BHC (Lindane)	3.4E+01	mg/kg	5.6E-08	mg/kg/day	1.1E+00	$(mg/kg/day)^{-1}$	6.E-08	4.3E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Arsenic	1.8E+01	mg/kg	1.8E-08	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	3.E-08	1.4E-07	mg/kg/day	3.0E-04	mg/kg/day	5.E-04
				Barium	4.6E+02	mg/kg	7.6E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.9E-06	mg/kg/day	2.0E-01	mg/kg/day	3.E-05
				Cadmium	1.0E+02	mg/kg	1.6E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.3E-06	mg/kg/day	1.0E-03	mg/kg/day	1.E-03
				Cobalt	2.0E+01	mg/kg	3.2E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.5E-07	mg/kg/day	3.0E-04	mg/kg/day	8.E-04
				Copper	7.2E+02	mg/kg	1.2E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	9.2E-06	mg/kg/day	4.0E-02	mg/kg/day	2.E-04
				Iron	2.7E+04	mg/kg	4.5E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.5E-04	mg/kg/day	7.0E-01	mg/kg/day	5.E-04
				Lead	3.2E+02	mg/kg	5.2E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.0E-06	mg/kg/day	NA	mg/kg/day	NA
				Manganese	8.3E+02	mg/kg	1.4E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.1E-05	mg/kg/day	1.4E-01	mg/kg/day	8.E-05
				Mercury	2.7E+00	mg/kg	4.4E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.4E-08	mg/kg/day	1.0E-04	mg/kg/day	3.E-04
				Zinc	7.3E+03	mg/kg	1.2E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	9.2E-05	mg/kg/day	3.0E-01	mg/kg/day	3.E-04
			Exp. Route Total								2.E-07					6.E-03
			Dermal													
				Benzo(a)anthracene	1.9E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	5.E-10	1.4E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	1.6E+00	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	4.E-08	1.2E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	2.4E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	6.E-10	1.8E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	2.4E-01	mg/kg	2.4E-10	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.8E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	1.5E+00	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	4.E-10	1.1E-08	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	1.7E+00	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	4.E-11	1.3E-08	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	2.7E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	7.E-09	2.6E-10	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	8.6E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	2.E-09	6.5E-09	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	1.6E+00	mg/kg	1.6E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.6E-09	mg/kg/day	2.0E-02	mg/kg/day	8.E-08
				Gamma-BHC (Lindane)	3.4E+01	mg/kg	1.0E-08	mg/kg/day	1.1E+00	$(mg/kg/day)^{-1}$	1.E-08	1.0E-08	mg/kg/day	3.0E-04	mg/kg/day	3.E-05
				Arsenic	1.8E+01	mg/kg	4.1E-09	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	6.E-09	3.2E-08	mg/kg/day	3.0E-04	mg/kg/day	1.E-04
				Barium	4.6E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.4E-02	mg/kg/day	NA
				Cadmium	1.0E+02	mg/kg	7.5E-10	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.8E-09	mg/kg/day	2.5E-05	mg/kg/day	2.E-04
				Cobalt	2.0E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-04	mg/kg/day	NA
				Copper	7.2E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	4.0E-02	mg/kg/day	NA
				Iron	2.7E+04	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	7.0E-01	mg/kg/day	NA
				Lead	3.2E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	8.3E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	5.6E-03	mg/kg/day	NA
				Mercury	2.7E+00	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.0E-04	mg/kg/day	NA
				Zinc	7.3E+03	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-01	mg/kg/day	NA
			Exp. Route Total								7.E-08					4.E-04
		Exposure Point Total									2.E-07					6.E-03
	Exposure Medium Total										2.E-07					6.E-03
Sediment Soil Total											2.E-07					6.E-03

Table 7.7.CTE
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor: Recreational Boater
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Water	Surface Water	DePue Lake	Ingestion													
		Surface Water		Cadmium	3.5E-03	mg/L	1.1E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	8.9E-09	mg/kg/day	5.0E-04	mg/kg/day	2.E-05
		Lake-wide		Lead	1.7E-02	mg/L	5.5E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.3E-08	mg/kg/day	NA	mg/kg/day	NA
				Manganese	4.8E-01	mg/L	1.6E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.2E-06	mg/kg/day	2.4E-02	mg/kg/day	5.E-05
				Ammonia	2.2E+01	mg/L	7.3E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.7E-05	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.2E+02	mg/L	3.8E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.0E-04	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	7.4E+00	mg/L	2.4E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.9E-05	mg/kg/day	1.6E+00	mg/kg/day	1.E-05
				Phosphorus	1.2E+00	mg/L	4.0E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.1E-06	mg/kg/day	NA	mg/kg/day	NA
				Sulfate	3.3E+02	mg/L	1.1E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	8.3E-04	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					8.E-05
Surface Water	Surface Water	DePue Lake	Dermal													
		Surface Water		Cadmium	3.5E-06	mg/cm^3	6.5E-10	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.1E-09	mg/kg/day	1.3E-05	mg/kg/day	4.E-04
		Lake-wide		Lead	1.7E-05	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	4.8E-04	mg/cm^3	8.9E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	6.9E-07	mg/kg/day	9.6E-04	mg/kg/day	7.E-04
				Ammonia	2.2E-02	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.2E-01	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	7.4E-03	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.6E+00	mg/kg/day	NA
				Phosphorus	1.2E-03	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Sulfate	3.3E-01	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					1.E-03
		Exposure Point Total									0.E+00					1.E-03
	Exposure Medium Total										0.E+00					1.E-03
Surface Water Total											0.E+00					1.E-03
Groundwater Seeps	Sediment	Seep Sediment Floodplain Area 1A	Ingestion	Arsenic	9.6E+00	mg/kg	9.4E-09	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	1.E-08	7.3E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
			Exp. Route Total								1.E-08					2.E-04
			Dermal	Arsenic	9.6E+00	mg/kg	2.1E-09	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	3.E-09	1.7E-08	mg/kg/day	3.0E-04	mg/kg/day	6.E-05
			Exp. Route Total								3.E-09					6.E-05
		Exposure Point Total									2.E-08					3.E-04
	Exposure Medium Total										2.E-08					3.E-04
Groundwater Seep Sediment Total											2.E-08					3.E-04
Groundwater Seeps	Surface Water	Seep Surface Water Floodplain Area 1A	Ingestion	Manganese	4.0E-01	mg/L	1.3E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.0E-06	mg/kg/day	2.4E-02	mg/kg/day	4.E-05
				Ammonia	5.1E-01	mg/L	1.7E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.3E-06	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					4.E-05
			Dermal	Manganese	4.0E-04	mg/cm^3	7.5E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.8E-07	mg/kg/day	9.6E-04	mg/kg/day	6.E-04
				Ammonia	5.1E-04	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					6.E-04
		Exposure Point Total									0.E+00					6.E-04
	Exposure Medium Total										0.E+00					6.E-04
Groundwater Seep Surface Water Total											0.E+00					6.E-04
											Total of Receptor Risks Across All Media	3.E-07				8.E-03

Note:
-- = Consituent is a mutagen, intakes/risk calculations are detailed in Appendix F.

Table 7.8.RME
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor: Recreational Boater
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Sediment	Sediment	DePue Lake	Ingestion													
		Surface Sediment		Benzo(a)anthracene	1.9E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	4.E-08	9.1E-08	mg/kg/day	NA	mg/kg/day	NA
		Lake-wide		Benzo(a)pyrene	1.6E+00	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	4.E-06	7.8E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	2.4E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	5.E-08	9.9E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	2.4E-01	mg/kg	9.9E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.2E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	1.5E+00	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	3.E-08	7.0E-07	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	1.7E+00	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	4.E-09	8.2E-07	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	2.7E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	6.E-07	1.3E-07	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	8.6E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	2.E-07	4.1E-07	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	1.6E+00	mg/kg	6.7E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.8E-07	mg/kg/day	2.0E-02	mg/kg/day	4.E-05
				Gamma-BHC (Lindane)	3.4E+01	mg/kg	8.3E-07	mg/kg/day	1.1E+00	$(mg/kg/day)^{-1}$	9.E-07	1.6E-05	mg/kg/day	3.0E-04	mg/kg/day	5.E-02
				Arsenic	1.8E+01	mg/kg	4.5E-07	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	7.E-07	5.3E-06	mg/kg/day	3.0E-04	mg/kg/day	2.E-02
				Barium	4.6E+02	mg/kg	1.9E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.2E-04	mg/kg/day	2.0E-01	mg/kg/day	1.E-03
				Cadmium	1.0E+02	mg/kg	4.1E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.7E-05	mg/kg/day	1.0E-03	mg/kg/day	5.E-02
				Cobalt	2.0E+01	mg/kg	8.1E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	9.4E-06	mg/kg/day	3.0E-04	mg/kg/day	3.E-02
				Copper	7.2E+02	mg/kg	2.9E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.4E-04	mg/kg/day	4.0E-02	mg/kg/day	9.E-03
				Iron	2.7E+04	mg/kg	1.1E-03	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.3E-02	mg/kg/day	7.0E-01	mg/kg/day	2.E-02
				Lead	3.2E+02	mg/kg	1.3E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.5E-04	mg/kg/day	NA	mg/kg/day	NA
				Manganese	8.3E+02	mg/kg	3.4E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.9E-04	mg/kg/day	1.4E-01	mg/kg/day	3.E-03
				Mercury	2.7E+00	mg/kg	1.1E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.3E-06	mg/kg/day	1.0E-04	mg/kg/day	1.E-02
				Zinc	7.3E+03	mg/kg	3.0E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.4E-03	mg/kg/day	3.0E-01	mg/kg/day	1.E-02
			Exp. Route Total								6.E-06					2.E-01
			Dermal													
				Benzo(a)anthracene	1.9E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	1.E-08	2.9E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	1.6E+00	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	1.E-06	2.5E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	2.4E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	2.E-08	3.7E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	2.4E-01	mg/kg	3.1E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.7E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	1.5E+00	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	1.E-08	2.2E-07	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	1.7E+00	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	1.E-09	2.6E-07	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	2.7E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	2.E-07	4.1E-08	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	8.6E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	6.E-08	1.3E-07	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	1.6E+00	mg/kg	2.1E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.5E-07	mg/kg/day	2.0E-02	mg/kg/day	1.E-05
				Gamma-BHC (Lindane)	3.4E+01	mg/kg	1.4E-07	mg/kg/day	1.1E+00	$(mg/kg/day)^{-1}$	1.E-07	1.6E-06	mg/kg/day	3.0E-04	mg/kg/day	5.E-03
				Arsenic	1.8E+01	mg/kg	5.5E-08	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	8.E-08	6.4E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				Barium	4.6E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.4E-02	mg/kg/day	NA
				Cadmium	1.0E+02	mg/kg	9.9E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.2E-07	mg/kg/day	2.5E-05	mg/kg/day	5.E-03
				Cobalt	2.0E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-04	mg/kg/day	NA
				Copper	7.2E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	4.0E-02	mg/kg/day	NA
				Iron	2.7E+04	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	7.0E-01	mg/kg/day	NA
				Lead	3.2E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	8.3E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	5.6E-03	mg/kg/day	NA
				Mercury	2.7E+00	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.0E-04	mg/kg/day	NA
				Zinc	7.3E+03	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-01	mg/kg/day	NA
			Exp. Route Total								2.E-06					1.E-02
		Exposure Point Total									8.E-06					2.E-01
	Exposure Medium Total										8.E-06					2.E-01
Sediment Soil Total											8.E-06					2.E-01

Table 7.8.RME
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor: Recreational Boater
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface Water	Surface Water	DePue Lake	Ingestion													
		Surface Water		Cadmium	3.5E-03	mg/L	7.1E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	8.3E-08	mg/kg/day	5.0E-04	mg/kg/day	2.E-04
		Lake-wide		Lead	1.7E-02	mg/L	3.4E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.0E-07	mg/kg/day	NA	mg/kg/day	NA
				Manganese	4.8E-01	mg/L	9.7E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.1E-05	mg/kg/day	2.4E-02	mg/kg/day	5.E-04
				Ammonia	2.2E+01	mg/L	4.5E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.3E-04	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.2E+02	mg/L	2.4E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.8E-03	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	7.4E+00	mg/L	1.5E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.8E-04	mg/kg/day	1.6E+00	mg/kg/day	1.E-04
				Phosphorus	1.2E+00	mg/L	2.5E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.9E-05	mg/kg/day	NA	mg/kg/day	NA
				Sulfate	3.3E+02	mg/L	6.6E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.7E-03	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					7.E-04
Surface Water	Surface Water	DePue Lake	Dermal													
		Surface Water		Cadmium	3.5E-06	mg/cm^3	1.7E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.0E-08	mg/kg/day	1.3E-05	mg/kg/day	2.E-03
		Lake-wide		Lead	1.7E-05	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	4.8E-04	mg/cm^3	2.4E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.8E-06	mg/kg/day	9.6E-04	mg/kg/day	3.E-03
				Ammonia	2.2E-02	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.2E-01	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	7.4E-03	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.6E+00	mg/kg/day	NA
				Phosphorus	1.2E-03	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Sulfate	3.3E-01	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					4.E-03
		Exposure Point Total									0.E+00					5.E-03
	Exposure Medium Total										0.E+00					5.E-03
Surface Water Total											0.E+00					5.E-03
Groundwater Seeps	Sediment	Sediment	Ingestion													
		Floodplain Area 1A		Arsenic	9.6E+00	mg/kg	2.3E-07	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	4.E-07	2.7E-06	mg/kg/day	3.0E-04	mg/kg/day	9.E-03
			Exp. Route Total								4.E-07					9.E-03
			Dermal													
				Arsenic	9.6E+00	mg/kg	2.9E-08	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	4.E-08	3.3E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
			Exp. Route Total								4.E-08					1.E-03
		Exposure Point Total									4.E-07					1.E-02
	Exposure Medium Total										4.E-07					1.E-02
Groundwater Seep Sediment Total											4.E-07					1.E-02
Groundwater Seeps	Surface Water	Surface Water	Ingestion													
		Floodplain Area 1A		Manganese	4.0E-01	mg/L	8.2E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	9.5E-06	mg/kg/day	2.4E-02	mg/kg/day	4.E-04
				Ammonia	5.1E-01	mg/L	1.0E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.2E-05	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					4.E-04
			Dermal													
				Manganese	4.0E-04	mg/cm^3	2.0E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.3E-06	mg/kg/day	9.6E-04	mg/kg/day	2.E-03
				Ammonia	5.1E-04	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					2.E-03
		Exposure Point Total									0.E+00					3.E-03
	Exposure Medium Total										0.E+00					3.E-03
Groundwater Seep Surface Water Total											0.E+00					3.E-03
Total of Receptor Risks Across All Media											8.E-06	Total of Receptor Hazards Across All Media				2.E-01

Note:
-- = Consituent is a mutagen, intakes/risk calculations are detailed in Appendix F.

Table 7.8.CTE
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor: Recreational Boater
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Sediment	Sediment	DePue Lake	Ingestion													
		Surface Sediment		Benzo(a)anthracene	1.9E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	1.E-08	2.3E-08	mg/kg/day	NA	mg/kg/day	NA
		Lake-wide		Benzo(a)pyrene	1.6E+00	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	9.E-07	2.0E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	2.4E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	1.E-08	2.9E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	2.4E-01	mg/kg	2.5E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.9E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	1.5E+00	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	8.E-09	1.8E-07	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	1.7E+00	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	9.E-10	2.1E-07	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	2.7E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	1.E-07	3.2E-08	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	8.6E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	5.E-08	1.0E-07	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	1.6E+00	mg/kg	1.7E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.9E-07	mg/kg/day	2.0E-02	mg/kg/day	1.E-05
				Gamma-BHC (Lindane)	3.4E+01	mg/kg	3.5E-07	mg/kg/day	1.1E+00	$(mg/kg/day)^{-1}$	4.E-07	4.0E-06	mg/kg/day	3.0E-04	mg/kg/day	1.E-02
				Arsenic	1.8E+01	mg/kg	1.1E-07	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	2.E-07	1.3E-06	mg/kg/day	3.0E-04	mg/kg/day	4.E-03
				Barium	4.6E+02	mg/kg	4.7E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.5E-05	mg/kg/day	2.0E-01	mg/kg/day	3.E-04
				Cadmium	1.0E+02	mg/kg	1.0E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.2E-05	mg/kg/day	1.0E-03	mg/kg/day	1.E-02
				Cobalt	2.0E+01	mg/kg	2.0E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.4E-06	mg/kg/day	3.0E-04	mg/kg/day	8.E-03
				Copper	7.2E+02	mg/kg	7.3E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	8.6E-05	mg/kg/day	4.0E-02	mg/kg/day	2.E-03
				Iron	2.7E+04	mg/kg	2.8E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.2E-03	mg/kg/day	7.0E-01	mg/kg/day	5.E-03
				Lead	3.2E+02	mg/kg	3.2E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.8E-05	mg/kg/day	NA	mg/kg/day	NA
				Manganese	8.3E+02	mg/kg	8.4E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	9.8E-05	mg/kg/day	1.4E-01	mg/kg/day	7.E-04
				Mercury	2.7E+00	mg/kg	2.7E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.2E-07	mg/kg/day	1.0E-04	mg/kg/day	3.E-03
				Zinc	7.3E+03	mg/kg	7.4E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	8.6E-04	mg/kg/day	3.0E-01	mg/kg/day	3.E-03
			Exp. Route Total								2.E-06					5.E-02
			Dermal													
				Benzo(a)anthracene	1.9E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	1.E-09	2.9E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	1.6E+00	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	8.E-08	2.5E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	2.4E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	1.E-09	3.7E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	2.4E-01	mg/kg	3.1E-10	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.7E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	1.5E+00	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	7.E-10	2.2E-08	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	1.7E+00	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	9.E-11	2.6E-08	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	2.7E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	1.E-08	4.1E-09	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	8.6E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	4.E-09	1.3E-08	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	1.6E+00	mg/kg	2.1E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.5E-08	mg/kg/day	2.0E-02	mg/kg/day	1.E-06
				Gamma-BHC (Lindane)	3.4E+01	mg/kg	1.4E-08	mg/kg/day	1.1E+00	$(mg/kg/day)^{-1}$	1.E-08	1.6E-07	mg/kg/day	3.0E-04	mg/kg/day	5.E-04
				Arsenic	1.8E+01	mg/kg	5.5E-09	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	8.E-09	6.4E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Barium	4.6E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.4E-02	mg/kg/day	NA
				Cadmium	1.0E+02	mg/kg	9.9E-10	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.2E-08	mg/kg/day	2.5E-05	mg/kg/day	5.E-04
				Cobalt	2.0E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-04	mg/kg/day	NA
				Copper	7.2E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	4.0E-02	mg/kg/day	NA
				Iron	2.7E+04	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	7.0E-01	mg/kg/day	NA
				Lead	3.2E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	8.3E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	5.6E-03	mg/kg/day	NA
				Mercury	2.7E+00	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.0E-04	mg/kg/day	NA
				Zinc	7.3E+03	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-01	mg/kg/day	NA
			Exp. Route Total								1.E-07					1.E-03
		Exposure Point Total									2.E-06					5.E-02
	Exposure Medium Total										2.E-06					5.E-02
Sediment Soil Total											2.E-06					5.E-02

Table 7.8.CTE
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor: Recreational Boater
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface Water	Surface Water	DePue Lake	Ingestion													
		Surface Water		Cadmium	3.5E-03	mg/L	3.6E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.1E-08	mg/kg/day	5.0E-04	mg/kg/day	8.E-05
		Lake-wide		Lead	1.7E-02	mg/L	1.7E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.0E-07	mg/kg/day	NA	mg/kg/day	NA
				Manganese	4.8E-01	mg/L	4.9E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.7E-06	mg/kg/day	2.4E-02	mg/kg/day	2.E-04
				Ammonia	2.2E+01	mg/L	2.3E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.6E-04	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.2E+02	mg/L	1.2E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.4E-03	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	7.4E+00	mg/L	7.5E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	8.8E-05	mg/kg/day	1.6E+00	mg/kg/day	5.E-05
				Phosphorus	1.2E+00	mg/L	1.3E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.5E-05	mg/kg/day	NA	mg/kg/day	NA
				Sulfate	3.3E+02	mg/L	3.3E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.9E-03	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					4.E-04
Surface Water	Surface Water	DePue Lake	Dermal													
		Surface Water		Cadmium	3.5E-06	mg/cm^3	8.7E-10	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.0E-08	mg/kg/day	1.3E-05	mg/kg/day	8.E-04
		Lake-wide		Lead	1.7E-05	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	4.8E-04	mg/cm^3	1.2E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.4E-06	mg/kg/day	9.6E-04	mg/kg/day	1.E-03
				Ammonia	2.2E-02	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.2E-01	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	7.4E-03	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.6E+00	mg/kg/day	NA
				Phosphorus	1.2E-03	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Sulfate	3.3E-01	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					2.E-03
		Exposure Point Total									0.E+00					3.E-03
	Exposure Medium Total										0.E+00					3.E-03
Surface Water Total											0.E+00					3.E-03
Groundwater Seeps	Sediment	Sediment Floodplain Area 1A	Ingestion	Arsenic	9.6E+00	mg/kg	5.9E-08	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	9.E-08	6.8E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
			Exp. Route Total								9.E-08					2.E-03
			Dermal	Arsenic	9.6E+00	mg/kg	2.9E-09	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	4.E-09	3.3E-08	mg/kg/day	3.0E-04	mg/kg/day	1.E-04
			Exp. Route Total								4.E-09					1.E-04
		Exposure Point Total									9.E-08					2.E-03
	Exposure Medium Total										9.E-08					2.E-03
Groundwater Seep Sediment Total											9.E-08					2.E-03
Groundwater Seeps	Surface Water	Surface Water Floodplain Area 1A	Ingestion	Manganese	4.0E-01	mg/L	4.1E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.8E-06	mg/kg/day	2.4E-02	mg/kg/day	2.E-04
				Ammonia	5.1E-01	mg/L	5.2E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	6.1E-06	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					2.E-04
			Dermal	Manganese	4.0E-04	mg/cm^3	1.0E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.2E-06	mg/kg/day	9.6E-04	mg/kg/day	1.E-03
				Ammonia	5.1E-04	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					1.E-03
		Exposure Point Total									0.E+00					1.E-03
	Exposure Medium Total										0.E+00					1.E-03
Groundwater Seep Surface Water Total											0.E+00					1.E-03
										Total of Receptor Risks Across All Media	2.E-06			Total of Receptor Hazards Across All Media		6.E-02

Note:
-- = Consituent is a mutagen, intakes/risk calculations are detailed in Appendix F.

Table 7.9.RME
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor: Angler (Boat)
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Sediment	Sediment	DePue Lake	Ingestion													
		Surface Sediment		Benzo(a)anthracene	1.9E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	1.E-08	1.9E-08	mg/kg/day	NA	mg/kg/day	NA
		Lake-wide		Benzo(a)pyrene	1.6E+00	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	1.E-06	1.6E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	2.4E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	1.E-08	2.4E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	2.4E-01	mg/kg	8.2E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.4E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	1.5E+00	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	9.E-09	1.4E-07	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	1.7E+00	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	1.E-09	1.7E-07	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	2.7E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	2.E-07	2.7E-08	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	8.6E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	5.E-08	8.4E-08	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	1.6E+00	mg/kg	5.5E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.6E-07	mg/kg/day	2.0E-02	mg/kg/day	8.E-06
				Gamma-BHC (Lindane)	3.4E+01	mg/kg	1.1E-06	mg/kg/day	1.1E+00	$(mg/kg/day)^{-1}$	1.E-06	3.3E-06	mg/kg/day	3.0E-04	mg/kg/day	1.E-02
				Arsenic	1.8E+01	mg/kg	3.7E-07	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	6.E-07	1.1E-06	mg/kg/day	3.0E-04	mg/kg/day	4.E-03
				Barium	4.6E+02	mg/kg	1.6E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.5E-05	mg/kg/day	2.0E-01	mg/kg/day	2.E-04
				Cadmium	1.0E+02	mg/kg	3.4E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	9.8E-06	mg/kg/day	1.0E-03	mg/kg/day	1.E-02
				Cobalt	2.0E+01	mg/kg	6.7E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.9E-06	mg/kg/day	3.0E-04	mg/kg/day	6.E-03
				Copper	7.2E+02	mg/kg	2.4E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.1E-05	mg/kg/day	4.0E-02	mg/kg/day	2.E-03
				Iron	2.7E+04	mg/kg	9.2E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.7E-03	mg/kg/day	7.0E-01	mg/kg/day	4.E-03
				Lead	3.2E+02	mg/kg	1.1E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.1E-05	mg/kg/day	NA	mg/kg/day	NA
				Manganese	8.3E+02	mg/kg	2.8E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	8.1E-05	mg/kg/day	1.4E-01	mg/kg/day	6.E-04
				Mercury	2.7E+00	mg/kg	9.0E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.6E-07	mg/kg/day	1.0E-04	mg/kg/day	3.E-03
				Zinc	7.3E+03	mg/kg	2.4E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.1E-04	mg/kg/day	3.0E-01	mg/kg/day	2.E-03
			Exp. Route Total								3.E-06					4.E-02
			Dermal													
				Benzo(a)anthracene	1.9E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	2.E-08	2.8E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	1.6E+00	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	1.E-06	2.4E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	2.4E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	2.E-08	3.5E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	2.4E-01	mg/kg	1.2E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.5E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	1.5E+00	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	1.E-08	2.1E-07	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	1.7E+00	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	1.E-09	2.5E-07	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	2.7E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	2.E-07	4.0E-08	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	8.6E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	7.E-08	1.3E-07	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	1.6E+00	mg/kg	8.2E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.4E-07	mg/kg/day	2.0E-02	mg/kg/day	1.E-05
				Gamma-BHC (Lindane)	3.4E+01	mg/kg	5.2E-07	mg/kg/day	1.1E+00	$(mg/kg/day)^{-1}$	6.E-07	1.5E-06	mg/kg/day	3.0E-04	mg/kg/day	5.E-03
				Arsenic	1.8E+01	mg/kg	2.1E-07	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	3.E-07	6.2E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				Barium	4.6E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.4E-02	mg/kg/day	NA
				Cadmium	1.0E+02	mg/kg	3.8E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.1E-07	mg/kg/day	2.5E-05	mg/kg/day	4.E-03
				Cobalt	2.0E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-04	mg/kg/day	NA
				Copper	7.2E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	4.0E-02	mg/kg/day	NA
				Iron	2.7E+04	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	7.0E-01	mg/kg/day	NA
				Lead	3.2E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	8.3E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	5.6E-03	mg/kg/day	NA
				Mercury	2.7E+00	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.0E-04	mg/kg/day	NA
				Zinc	7.3E+03	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-01	mg/kg/day	NA
			Exp. Route Total								3.E-06					1.E-02
		Exposure Point Total									6.E-06					5.E-02
	Exposure Medium Total										6.E-06					5.E-02
Sediment Soil Total											6.E-06					5.E-02

Table 7.9.RME
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor: Angler (Boat)
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface Water	Surface Water	DePue Lake	Ingestion													
		Surface Water		Cadmium	3.5E-03	mg/L	1.2E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.4E-08	mg/kg/day	5.0E-04	mg/kg/day	7.E-05
		Lake-wide		Lead	1.7E-02	mg/L	5.7E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.7E-07	mg/kg/day	NA	mg/kg/day	NA
				Manganese	4.8E-01	mg/L	1.6E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.7E-06	mg/kg/day	2.4E-02	mg/kg/day	2.E-04
				Ammonia	2.2E+01	mg/L	7.5E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.2E-04	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.2E+02	mg/L	3.9E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.1E-03	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	7.4E+00	mg/L	2.5E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.2E-05	mg/kg/day	1.6E+00	mg/kg/day	5.E-05
				Phosphorus	1.2E+00	mg/L	4.1E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.2E-05	mg/kg/day	NA	mg/kg/day	NA
				Sulfate	3.3E+02	mg/L	1.1E-03	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.2E-03	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					3.E-04
			Dermal													
				Cadmium	3.5E-06	mg/cm^3	6.7E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.9E-08	mg/kg/day	1.3E-05	mg/kg/day	1.E-03
				Lead	1.7E-05	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	4.8E-04	mg/cm^3	9.1E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.7E-06	mg/kg/day	9.6E-04	mg/kg/day	3.E-03
				Ammonia	2.2E-02	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.2E-01	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	7.4E-03	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.6E+00	mg/kg/day	NA
				Phosphorus	1.2E-03	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Sulfate	3.3E-01	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					4.E-03
		Exposure Point Total									0.E+00					5.E-03
	Exposure Medium Total										0.E+00					5.E-03
Surface Water Total											0.E+00					5.E-03
Groundwater Seeps	Sediment	Seep Sediment Floodplain Area 1A	Ingestion	Arsenic	9.6E+00	mg/kg	1.9E-07	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	3.E-07	5.6E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
			Exp. Route Total								3.E-07					2.E-03
			Dermal	Arsenic	9.6E+00	mg/kg	1.1E-07	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	2.E-07	3.2E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
			Exp. Route Total								2.E-07					1.E-03
		Exposure Point Total									5.E-07					3.E-03
	Exposure Medium Total										5.E-07					3.E-03
Groundwater Seep Sediment Total											5.E-07					3.E-03
Groundwater Seeps	Surface Water	Seep Surface Water Floodplain Area 1A	Ingestion	Manganese	4.0E-01	mg/L	1.3E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.9E-06	mg/kg/day	2.4E-02	mg/kg/day	2.E-04
				Ammonia	5.1E-01	mg/L	1.7E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.0E-06	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					2.E-04
			Dermal	Manganese	4.0E-04	mg/cm^3	7.7E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.2E-06	mg/kg/day	9.6E-04	mg/kg/day	2.E-03
				Ammonia	5.1E-04	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					2.E-03
		Exposure Point Total									0.E+00					2.E-03
	Exposure Medium Total										0.E+00					2.E-03
Groundwater Seep Surface Water Total											0.E+00					2.E-03

Table 7.9.RME
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor: Angler (Boat)
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Fish Tissue	Fish Tissue	DePue Lake Lake-wide	Ingestion	Lead	2.0E-01	mg/kg	1.2E-01	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.4E-01	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					0.E+00
		Exposure Point Total									0.E+00					0.E+00
	Exposure Medium Total										0.E+00					0.E+00
Fish Tissue Total											0.E+00					0.E+00
											Total of Receptor Risks Across All Media					6.E-06
																Total of Receptor Hazards Across All Media

Note:
NA = Not available
-- = Consituent is a mutagen, intakes/risk calculations are detailed in Appendix F.

Table 7.9.CTE
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor: Angler (Boat)
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Sediment	Sediment	DePue Lake	Ingestion													
		Surface Sediment		Benzo(a)anthracene	1.9E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	1.E-09	3.7E-09	mg/kg/day	NA	mg/kg/day	NA
		Lake-wide		Benzo(a)pyrene	1.6E+00	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	1.E-07	3.2E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	2.4E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	2.E-09	4.8E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	2.4E-01	mg/kg	6.1E-10	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.8E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	1.5E+00	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	9.E-10	2.9E-08	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	1.7E+00	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	1.E-10	3.4E-08	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	2.7E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	2.E-08	5.3E-09	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	8.6E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	5.E-09	1.7E-08	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	1.6E+00	mg/kg	4.1E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.2E-08	mg/kg/day	2.0E-02	mg/kg/day	2.E-06
				Gamma-BHC (Lindane)	3.4E+01	mg/kg	8.6E-08	mg/kg/day	1.1E+00	$(mg/kg/day)^{-1}$	9.E-08	6.7E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				Arsenic	1.8E+01	mg/kg	2.8E-08	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	4.E-08	2.2E-07	mg/kg/day	3.0E-04	mg/kg/day	7.E-04
				Barium	4.6E+02	mg/kg	1.2E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	9.0E-06	mg/kg/day	2.0E-01	mg/kg/day	5.E-05
				Cadmium	1.0E+02	mg/kg	2.5E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.0E-06	mg/kg/day	1.0E-03	mg/kg/day	2.E-03
				Cobalt	2.0E+01	mg/kg	5.0E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.9E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Copper	7.2E+02	mg/kg	1.8E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.4E-05	mg/kg/day	4.0E-02	mg/kg/day	4.E-04
				Iron	2.7E+04	mg/kg	6.9E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.3E-04	mg/kg/day	7.0E-01	mg/kg/day	8.E-04
				Lead	3.2E+02	mg/kg	8.0E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	6.2E-06	mg/kg/day	NA	mg/kg/day	NA
				Manganese	8.3E+02	mg/kg	2.1E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.6E-05	mg/kg/day	1.4E-01	mg/kg/day	1.E-04
				Mercury	2.7E+00	mg/kg	6.7E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.2E-08	mg/kg/day	1.0E-04	mg/kg/day	5.E-04
				Zinc	7.3E+03	mg/kg	1.8E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.4E-04	mg/kg/day	3.0E-01	mg/kg/day	5.E-04
			Exp. Route Total								3.E-07					8.E-03
			Dermal													
				Benzo(a)anthracene	1.9E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	7.E-10	2.2E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	1.6E+00	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	6.E-08	1.9E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	2.4E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	9.E-10	2.8E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	2.4E-01	mg/kg	3.6E-10	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.8E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	1.5E+00	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	6.E-10	1.7E-08	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	1.7E+00	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	6.E-11	2.0E-08	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	2.7E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	1.E-08	3.2E-09	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	8.6E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	3.E-09	1.0E-08	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	1.6E+00	mg/kg	2.4E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.9E-08	mg/kg/day	2.0E-02	mg/kg/day	1.E-06
				Gamma-BHC (Lindane)	3.4E+01	mg/kg	1.6E-08	mg/kg/day	1.1E+00	$(mg/kg/day)^{-1}$	2.E-08	1.2E-07	mg/kg/day	3.0E-04	mg/kg/day	4.E-04
				Arsenic	1.8E+01	mg/kg	6.4E-09	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	1.E-08	4.9E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Barium	4.6E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.4E-02	mg/kg/day	NA
				Cadmium	1.0E+02	mg/kg	1.1E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	8.9E-09	mg/kg/day	2.5E-05	mg/kg/day	4.E-04
				Cobalt	2.0E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-04	mg/kg/day	NA
				Copper	7.2E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	4.0E-02	mg/kg/day	NA
				Iron	2.7E+04	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	7.0E-01	mg/kg/day	NA
				Lead	3.2E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	8.3E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	5.6E-03	mg/kg/day	NA
				Mercury	2.7E+00	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.0E-04	mg/kg/day	NA
				Zinc	7.3E+03	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-01	mg/kg/day	NA
			Exp. Route Total								1.E-07					9.E-04
		Exposure Point Total									4.E-07					9.E-03
	Exposure Medium Total										4.E-07					9.E-03
Sediment Soil Total											4.E-07					9.E-03

Table 7.9.CTE
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor: Angler (Boat)
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Water	Surface Water	DePue Lake	Ingestion													
		Surface Water		Cadmium	3.5E-03	mg/L	1.8E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.4E-08	mg/kg/day	5.0E-04	mg/kg/day	3.E-05
		Lake-wide		Lead	1.7E-02	mg/L	8.5E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	6.6E-08	mg/kg/day	NA	mg/kg/day	NA
				Manganese	4.8E-01	mg/L	2.4E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.9E-06	mg/kg/day	2.4E-02	mg/kg/day	8.E-05
				Ammonia	2.2E+01	mg/L	1.1E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	8.7E-05	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.2E+02	mg/L	5.9E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.6E-04	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	7.4E+00	mg/L	3.7E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.9E-05	mg/kg/day	1.6E+00	mg/kg/day	2.E-05
				Phosphorus	1.2E+00	mg/L	6.2E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.8E-06	mg/kg/day	NA	mg/kg/day	NA
				Sulfate	3.3E+02	mg/L	1.6E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.3E-03	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					1.E-04
Surface Water	Surface Water	DePue Lake	Dermal													
		Surface Water		Cadmium	3.5E-06	mg/cm^3	1.0E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.8E-09	mg/kg/day	1.3E-05	mg/kg/day	6.E-04
		Lake-wide		Lead	1.7E-05	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	4.8E-04	mg/cm^3	1.4E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.1E-06	mg/kg/day	9.6E-04	mg/kg/day	1.E-03
				Ammonia	2.2E-02	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.2E-01	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	7.4E-03	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.6E+00	mg/kg/day	NA
				Phosphorus	1.2E-03	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Sulfate	3.3E-01	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					2.E-03
		Exposure Point Total									0.E+00					2.E-03
	Exposure Medium Total										0.E+00					2.E-03
Surface Water Total											0.E+00					2.E-03
Groundwater Seeps	Sediment	Seep Sediment Floodplain Area 1A	Ingestion	Arsenic	9.6E+00	mg/kg	1.4E-08	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	2.E-08	1.1E-07	mg/kg/day	3.0E-04	mg/kg/day	4.E-04
			Exp. Route Total								2.E-08					4.E-04
			Dermal	Arsenic	9.6E+00	mg/kg	3.3E-09	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	5.E-09	2.6E-08	mg/kg/day	3.0E-04	mg/kg/day	9.E-05
			Exp. Route Total								5.E-09					9.E-05
		Exposure Point Total									3.E-08					5.E-04
	Exposure Medium Total										3.E-08					5.E-04
Groundwater Seep Sediment Total											3.E-08					5.E-04
Groundwater Seeps	Surface Water	Seep Surface Water Floodplain Area 1A	Ingestion	Manganese	4.0E-01	mg/L	2.0E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.6E-06	mg/kg/day	2.4E-02	mg/kg/day	7.E-05
				Ammonia	5.1E-01	mg/L	2.6E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.0E-06	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					7.E-05
			Dermal	Manganese	4.0E-04	mg/cm^3	1.2E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	8.9E-07	mg/kg/day	9.6E-04	mg/kg/day	9.E-04
				Ammonia	5.1E-04	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					9.E-04
		Exposure Point Total									0.E+00					1.E-03
	Exposure Medium Total										0.E+00					1.E-03
Groundwater Seep Surface Water Total											0.E+00					1.E-03

Table 7.9.CTE
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor: Angler (Boat)
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Fish Tissue	Fish Tissue	DePue Lake Lake-wide	Ingestion	Lead	2.0E-01	mg/kg	7.1E-03	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.5E-02	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					0.E+00
		Exposure Point Total									0.E+00					0.E+00
	Exposure Medium Total										0.E+00					0.E+00
Fish Tissue Total											0.E+00					0.E+00
											Total of Receptor Risks Across All Media					4.E-07
																Total of Receptor Hazards Across All Media
																1.E-02

Note:
NA = Not available
-- = Consituent is a mutagen, intakes/risk calculations are detailed in Appendix F.

Table 7.10.RME
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor: Angler (Boat)
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Sediment	Sediment	DePue Lake	Ingestion													
		Surface Sediment		Benzo(a)anthracene	1.9E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	8.E-08	1.7E-07	mg/kg/day	NA	mg/kg/day	NA
		Lake-wide		Benzo(a)pyrene	1.6E+00	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	7.E-06	1.5E-06	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	2.4E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	1.E-07	2.2E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	2.4E-01	mg/kg	1.9E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.2E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	1.5E+00	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	6.E-08	1.3E-06	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	1.7E+00	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	7.E-09	1.6E-06	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	2.7E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	1.E-06	2.5E-07	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	8.6E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	4.E-07	7.9E-07	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	1.6E+00	mg/kg	1.3E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.5E-06	mg/kg/day	2.0E-02	mg/kg/day	7.E-05
				Gamma-BHC (Lindane)	3.4E+01	mg/kg	2.7E-06	mg/kg/day	1.1E+00	$(mg/kg/day)^{-1}$	3.E-06	3.1E-05	mg/kg/day	3.0E-04	mg/kg/day	1.E-01
				Arsenic	1.8E+01	mg/kg	8.7E-07	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	1.E-06	1.0E-05	mg/kg/day	3.0E-04	mg/kg/day	3.E-02
				Barium	4.6E+02	mg/kg	3.6E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.2E-04	mg/kg/day	2.0E-01	mg/kg/day	2.E-03
				Cadmium	1.0E+02	mg/kg	7.8E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	9.1E-05	mg/kg/day	1.0E-03	mg/kg/day	9.E-02
				Cobalt	2.0E+01	mg/kg	1.6E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.8E-05	mg/kg/day	3.0E-04	mg/kg/day	6.E-02
				Copper	7.2E+02	mg/kg	5.7E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	6.6E-04	mg/kg/day	4.0E-02	mg/kg/day	2.E-02
				Iron	2.7E+04	mg/kg	2.1E-03	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.5E-02	mg/kg/day	7.0E-01	mg/kg/day	4.E-02
				Lead	3.2E+02	mg/kg	2.5E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.9E-04	mg/kg/day	NA	mg/kg/day	NA
				Manganese	8.3E+02	mg/kg	6.5E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.6E-04	mg/kg/day	1.4E-01	mg/kg/day	5.E-03
				Mercury	2.7E+00	mg/kg	2.1E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.4E-06	mg/kg/day	1.0E-04	mg/kg/day	2.E-02
				Zinc	7.3E+03	mg/kg	5.7E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	6.6E-03	mg/kg/day	3.0E-01	mg/kg/day	2.E-02
			Exp. Route Total								1.E-05					4.E-01
			Dermal													
				Benzo(a)anthracene	1.9E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	2.E-08	5.5E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	1.6E+00	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	2.E-06	4.8E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	2.4E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	3.E-08	7.1E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	2.4E-01	mg/kg	6.0E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.1E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	1.5E+00	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	2.E-08	4.3E-07	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	1.7E+00	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	2.E-09	5.0E-07	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	2.7E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	4.E-07	7.9E-08	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	8.6E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	1.E-07	2.5E-07	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	1.6E+00	mg/kg	4.1E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.8E-07	mg/kg/day	2.0E-02	mg/kg/day	2.E-05
				Gamma-BHC (Lindane)	3.4E+01	mg/kg	2.6E-07	mg/kg/day	1.1E+00	$(mg/kg/day)^{-1}$	3.E-07	3.0E-06	mg/kg/day	3.0E-04	mg/kg/day	1.E-02
				Arsenic	1.8E+01	mg/kg	1.1E-07	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	2.E-07	1.2E-06	mg/kg/day	3.0E-04	mg/kg/day	4.E-03
				Barium	4.6E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.4E-02	mg/kg/day	NA
				Cadmium	1.0E+02	mg/kg	1.9E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.2E-07	mg/kg/day	2.5E-05	mg/kg/day	9.E-03
				Cobalt	2.0E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-04	mg/kg/day	NA
				Copper	7.2E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	4.0E-02	mg/kg/day	NA
				Iron	2.7E+04	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	7.0E-01	mg/kg/day	NA
				Lead	3.2E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	8.3E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	5.6E-03	mg/kg/day	NA
				Mercury	2.7E+00	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.0E-04	mg/kg/day	NA
				Zinc	7.3E+03	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-01	mg/kg/day	NA
			Exp. Route Total								3.E-06					2.E-02
		Exposure Point Total									2.E-05					4.E-01
	Exposure Medium Total										2.E-05					4.E-01
Sediment Soil Total											2.E-05					4.E-01

Table 7.10.RME
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor: Angler (Boat)
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk			Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units	Cancer Risk	Value	Units	Value	Units	
Surface Water	Surface Water	DePue Lake	Ingestion													
		Surface Water		Cadmium	3.5E-03	mg/L	1.4E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.6E-07	mg/kg/day	5.0E-04	mg/kg/day	3.E-04
		Lake-wide		Lead	1.7E-02	mg/L	6.6E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.7E-07	mg/kg/day	NA	mg/kg/day	NA
				Manganese	4.8E-01	mg/L	1.9E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.2E-05	mg/kg/day	2.4E-02	mg/kg/day	9.E-04
				Ammonia	2.2E+01	mg/L	8.7E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.0E-03	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.2E+02	mg/L	4.6E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.3E-03	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	7.4E+00	mg/L	2.9E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.4E-04	mg/kg/day	1.6E+00	mg/kg/day	2.E-04
				Phosphorus	1.2E+00	mg/L	4.8E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.6E-05	mg/kg/day	NA	mg/kg/day	NA
				Sulfate	3.3E+02	mg/L	1.3E-03	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.5E-02	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					1.E-03
Surface Water	Surface Water	DePue Lake	Dermal													
		Surface Water		Cadmium	3.5E-06	mg/cm^3	3.3E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.9E-08	mg/kg/day	1.3E-05	mg/kg/day	3.E-03
		Lake-wide		Lead	1.7E-05	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	4.8E-04	mg/cm^3	4.6E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.3E-06	mg/kg/day	9.6E-04	mg/kg/day	6.E-03
				Ammonia	2.2E-02	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.2E-01	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	7.4E-03	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.6E+00	mg/kg/day	NA
				Phosphorus	1.2E-03	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Sulfate	3.3E-01	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					9.E-03
		Exposure Point Total									0.E+00					1.E-02
	Exposure Medium Total										0.E+00					1.E-02
Surface Water Total											0.E+00					1.E-02
Groundwater Seeps	Sediment	Sediment Floodplain Area 1A	Ingestion	Arsenic	9.6E+00	mg/kg	4.5E-07	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	7.E-07	5.3E-06	mg/kg/day	3.0E-04	mg/kg/day	2.E-02
			Exp. Route Total								7.E-07					2.E-02
			Dermal	Arsenic	9.6E+00	mg/kg	5.5E-08	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	8.E-08	6.4E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
			Exp. Route Total								8.E-08					2.E-03
		Exposure Point Total									8.E-07					2.E-02
	Exposure Medium Total										8.E-07					2.E-02
Groundwater Seep Sediment Total											8.E-07					2.E-02
Groundwater Seeps	Surface Water	Surface Water Floodplain Area 1A	Ingestion	Manganese	4.0E-01	mg/L	1.6E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.8E-05	mg/kg/day	2.4E-02	mg/kg/day	8.E-04
				Ammonia	5.1E-01	mg/L	2.0E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.3E-05	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					8.E-04
			Dermal	Manganese	4.0E-04	mg/cm^3	3.8E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.5E-06	mg/kg/day	9.6E-04	mg/kg/day	5.E-03
				Ammonia	5.1E-04	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					5.E-03
		Exposure Point Total									0.E+00					5.E-03
	Exposure Medium Total										0.E+00					5.E-03
Groundwater Seep Surface Water Total											0.E+00					5.E-03

Table 7.10.RME
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor: Angler (Boat)
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk			Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units	Cancer Risk	Value	Units	Value	Units	
Fish Tissue	Fish Tissue	DePue Lake Lake-wide	Ingestion	Lead	2.0E-01	mg/kg	3.2E-03	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.7E-02	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					0.E+00
		Exposure Point Total									0.E+00					0.E+00
	Exposure Medium Total										0.E+00					0.E+00
Fish Tissue Total											0.E+00					0.E+00
											Total of Receptor Risks Across All Media					2.E-05
																Total of Receptor Hazards Across All Media
																5.E-01

Note:
NA = Not available
-- = Consituent is a mutagen, intakes/risk calculations are detailed in Appendix F.

Table 7.10.CTE
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor: Angler (Boat)
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Sediment	Sediment	DePue Lake	Ingestion													
		Surface Sediment		Benzo(a)anthracene	1.9E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	2.E-08	3.5E-08	mg/kg/day	NA	mg/kg/day	NA
		Lake-wide		Benzo(a)pyrene	1.6E+00	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	1.E-06	3.0E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	2.4E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	2.E-08	4.4E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	2.4E-01	mg/kg	3.8E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.4E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	1.5E+00	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	1.E-08	2.7E-07	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	1.7E+00	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	1.E-09	3.2E-07	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	2.7E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	2.E-07	5.0E-08	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	8.6E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	7.E-08	1.6E-07	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	1.6E+00	mg/kg	2.6E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.0E-07	mg/kg/day	2.0E-02	mg/kg/day	1.E-05
				Gamma-BHC (Lindane)	3.4E+01	mg/kg	5.3E-07	mg/kg/day	1.1E+00	$(mg/kg/day)^{-1}$	6.E-07	6.2E-06	mg/kg/day	3.0E-04	mg/kg/day	2.E-02
				Arsenic	1.8E+01	mg/kg	1.7E-07	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	3.E-07	2.0E-06	mg/kg/day	3.0E-04	mg/kg/day	7.E-03
				Barium	4.6E+02	mg/kg	7.2E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	8.4E-05	mg/kg/day	2.0E-01	mg/kg/day	4.E-04
				Cadmium	1.0E+02	mg/kg	1.6E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.8E-05	mg/kg/day	1.0E-03	mg/kg/day	2.E-02
				Cobalt	2.0E+01	mg/kg	3.1E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.6E-06	mg/kg/day	3.0E-04	mg/kg/day	1.E-02
				Copper	7.2E+02	mg/kg	1.1E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.3E-04	mg/kg/day	4.0E-02	mg/kg/day	3.E-03
				Iron	2.7E+04	mg/kg	4.3E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.0E-03	mg/kg/day	7.0E-01	mg/kg/day	7.E-03
				Lead	3.2E+02	mg/kg	5.0E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.8E-05	mg/kg/day	NA	mg/kg/day	NA
				Manganese	8.3E+02	mg/kg	1.3E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.5E-04	mg/kg/day	1.4E-01	mg/kg/day	1.E-03
				Mercury	2.7E+00	mg/kg	4.2E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.9E-07	mg/kg/day	1.0E-04	mg/kg/day	5.E-03
				Zinc	7.3E+03	mg/kg	1.1E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.3E-03	mg/kg/day	3.0E-01	mg/kg/day	4.E-03
			Exp. Route Total								3.E-06					8.E-02
			Dermal													
				Benzo(a)anthracene	1.9E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	2.E-09	4.4E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	1.6E+00	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	2.E-07	3.8E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	2.4E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	3.E-09	5.6E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	2.4E-01	mg/kg	4.8E-10	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.6E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	1.5E+00	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	2.E-09	3.4E-08	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	1.7E+00	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	2.E-10	4.0E-08	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	2.7E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	3.E-08	6.3E-09	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	8.6E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	9.E-09	2.0E-08	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	1.6E+00	mg/kg	3.3E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.8E-08	mg/kg/day	2.0E-02	mg/kg/day	2.E-06
				Gamma-BHC (Lindane)	3.4E+01	mg/kg	2.1E-08	mg/kg/day	1.1E+00	$(mg/kg/day)^{-1}$	2.E-08	2.4E-07	mg/kg/day	3.0E-04	mg/kg/day	8.E-04
				Arsenic	1.8E+01	mg/kg	8.5E-09	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	1.E-08	9.9E-08	mg/kg/day	3.0E-04	mg/kg/day	3.E-04
				Barium	4.6E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.4E-02	mg/kg/day	NA
				Cadmium	1.0E+02	mg/kg	1.5E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.8E-08	mg/kg/day	2.5E-05	mg/kg/day	7.E-04
				Cobalt	2.0E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-04	mg/kg/day	NA
				Copper	7.2E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	4.0E-02	mg/kg/day	NA
				Iron	2.7E+04	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	7.0E-01	mg/kg/day	NA
				Lead	3.2E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	8.3E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	5.6E-03	mg/kg/day	NA
				Mercury	2.7E+00	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.0E-04	mg/kg/day	NA
				Zinc	7.3E+03	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-01	mg/kg/day	NA
			Exp. Route Total								3.E-07					2.E-03
		Exposure Point Total									3.E-06					8.E-02
	Exposure Medium Total										3.E-06					8.E-02
Sediment Soil Total											3.E-06					8.E-02

Table 7.10.CTE
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor: Angler (Boat)
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface Water	Surface Water	DePue Lake	Ingestion													
		Surface Water		Cadmium	3.5E-03	mg/L	5.5E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	6.4E-08	mg/kg/day	5.0E-04	mg/kg/day	1.E-04
		Lake-wide		Lead	1.7E-02	mg/L	2.6E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.1E-07	mg/kg/day	NA	mg/kg/day	NA
				Manganese	4.8E-01	mg/L	7.5E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	8.7E-06	mg/kg/day	2.4E-02	mg/kg/day	4.E-04
				Ammonia	2.2E+01	mg/L	3.5E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.1E-04	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.2E+02	mg/L	1.8E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.1E-03	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	7.4E+00	mg/L	1.2E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.3E-04	mg/kg/day	1.6E+00	mg/kg/day	8.E-05
				Phosphorus	1.2E+00	mg/L	1.9E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.2E-05	mg/kg/day	NA	mg/kg/day	NA
				Sulfate	3.3E+02	mg/L	5.1E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.9E-03	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					6.E-04
Surface Water	Surface Water	DePue Lake	Dermal													
		Surface Water		Cadmium	3.5E-06	mg/cm^3	1.3E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.6E-08	mg/kg/day	1.3E-05	mg/kg/day	1.E-03
		Lake-wide		Lead	1.7E-05	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	4.8E-04	mg/cm^3	1.8E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.1E-06	mg/kg/day	9.6E-04	mg/kg/day	2.E-03
				Ammonia	2.2E-02	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.2E-01	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	7.4E-03	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.6E+00	mg/kg/day	NA
				Phosphorus	1.2E-03	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Sulfate	3.3E-01	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					3.E-03
		Exposure Point Total									0.E+00					4.E-03
	Exposure Medium Total										0.E+00					4.E-03
Surface Water Total											0.E+00					4.E-03
Groundwater Seeps	Sediment	Sediment Floodplain Area 1A	Ingestion	Arsenic	9.6E+00	mg/kg	9.0E-08	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	1.E-07	1.1E-06	mg/kg/day	3.0E-04	mg/kg/day	4.E-03
			Exp. Route Total								1.E-07					4.E-03
			Dermal	Arsenic	9.6E+00	mg/kg	4.4E-09	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	7.E-09	5.1E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
			Exp. Route Total								7.E-09					2.E-04
		Exposure Point Total									1.E-07					4.E-03
	Exposure Medium Total										1.E-07					4.E-03
Groundwater Seep Sediment Total											1.E-07					4.E-03
Groundwater Seeps	Surface Water	Surface Water Floodplain Area 1A	Ingestion	Manganese	4.0E-01	mg/L	6.3E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.3E-06	mg/kg/day	2.4E-02	mg/kg/day	3.E-04
				Ammonia	5.1E-01	mg/L	8.0E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	9.3E-06	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					3.E-04
			Dermal	Manganese	4.0E-04	mg/cm^3	1.5E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.8E-06	mg/kg/day	9.6E-04	mg/kg/day	2.E-03
				Ammonia	5.1E-04	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					2.E-03
		Exposure Point Total									0.E+00					2.E-03
	Exposure Medium Total										0.E+00					2.E-03
Groundwater Seep Surface Water Total											0.E+00					2.E-03

Table 7.10.CTE
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor: Angler (Boat)
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Fish Tissue	Fish Tissue	DePue Lake Lake-wide	Ingestion	Lead	2.0E-01	mg/kg	5.0E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.9E-03	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					0.E+00
		Exposure Point Total									0.E+00					0.E+00
	Exposure Medium Total										0.E+00					0.E+00
Fish Tissue Total											0.E+00					0.E+00
										Total of Receptor Risks Across All Media	3.E-06				Total of Receptor Hazards Across All Media	9.E-02

Note:
NA = Not available
-- = Consituent is a mutagen, intakes/risk calculations are detailed in Appendix F.

Table 7.11.RME
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor: Angler (Shoreline)
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Sediment	Sediment	DePue Lake Surface Sediment Sediment Area 1A	Ingestion													
				Benzo(a)anthracene	4.0E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	9.E-08	1.6E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	3.4E+00	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	8.E-07	1.3E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	2.8E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	7.E-08	1.1E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	1.2E+00	mg/kg	1.6E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.7E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	3.0E+00	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	7.E-09	1.2E-07	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	3.5E+00	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	8.E-10	1.4E-07	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	5.5E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	1.E-07	2.2E-08	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	1.7E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	4.E-08	6.7E-08	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	2.1E+00	mg/kg	2.8E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	8.2E-08	mg/kg/day	2.0E-02	mg/kg/day	4.E-06
				Arsenic	1.7E+01	mg/kg	1.4E-07	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	2.E-07	4.0E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Barium	4.2E+01	mg/kg	5.6E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.6E-06	mg/kg/day	2.0E-01	mg/kg/day	8.E-06
				Cadmium	8.1E+01	mg/kg	1.1E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.2E-06	mg/kg/day	1.0E-03	mg/kg/day	3.E-03
				Lead	2.7E+02	mg/kg	3.6E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.1E-05	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								1.E-06					5.E-03
			Dermal													
				Benzo(a)anthracene	4.0E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	1.E-07	2.3E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	3.4E+00	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	1.E-06	2.0E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	2.8E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	1.E-07	1.6E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	1.2E+00	mg/kg	2.4E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.0E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	3.0E+00	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	1.E-08	1.7E-07	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	3.5E+00	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	1.E-09	2.0E-07	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	5.5E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	2.E-07	3.2E-08	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	1.7E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	6.E-08	9.9E-08	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	2.1E+00	mg/kg	4.2E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.2E-07	mg/kg/day	2.0E-02	mg/kg/day	6.E-06
				Arsenic	1.7E+01	mg/kg	7.8E-08	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	1.E-07	2.3E-07	mg/kg/day	3.0E-04	mg/kg/day	8.E-04
				Barium	4.2E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.4E-02	mg/kg/day	NA
				Cadmium	8.1E+01	mg/kg	1.2E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.6E-08	mg/kg/day	2.5E-05	mg/kg/day	1.E-03
				Lead	2.7E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								2.E-06					2.E-03
		Exposure Point Total									3.E-06					7.E-03
	Exposure Medium Total										3.E-06					7.E-03
Sediment Soil Total											3.E-06					7.E-03
Surface Water	Surface Water	DePue Lake Surface Water Eastern Portion of Lake	Ingestion													
				Cadmium	3.5E-03	mg/L	1.2E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.4E-08	mg/kg/day	5.0E-04	mg/kg/day	7.E-05
				Lead	2.0E-02	mg/L	6.7E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.0E-07	mg/kg/day	NA	mg/kg/day	NA
				Manganese	3.8E-01	mg/L	1.3E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.7E-06	mg/kg/day	2.4E-02	mg/kg/day	2.E-04
				Ammonia	7.3E-01	mg/L	2.4E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.1E-06	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.6E+02	mg/L	5.3E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.5E-03	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	1.3E+01	mg/L	4.3E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.3E-04	mg/kg/day	1.6E+00	mg/kg/day	8.E-05
				Phosphorus	2.7E+00	mg/L	9.0E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.6E-05	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					3.E-04

Table 7.11.RME
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor: Angler (Shoreline)
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface Water	Surface Water	DePue Lake Surface Water Eastern Portion of Lake	Dermal													
				Cadmium	3.5E-06	mg/cm^3	6.7E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.9E-08	mg/kg/day	1.3E-05	mg/kg/day	1.E-03
				Lead	2.0E-05	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	3.8E-04	mg/cm^3	7.2E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.1E-06	mg/kg/day	9.6E-04	mg/kg/day	2.E-03
				Ammonia	7.3E-04	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.6E-01	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	1.3E-02	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.6E+00	mg/kg/day	NA
				Phosphorus	2.7E-03	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					4.E-03
		Exposure Point Total									0.E+00					4.E-03
	Exposure Medium Total										0.E+00					4.E-03
Surface Water Total											0.E+00					4.E-03
Groundwater Seeps	Sediment	Sediment Floodplain Area 1A	Ingestion	Arsenic	9.6E+00	mg/kg	1.2E-07	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	2.E-07	3.4E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
			Exp. Route Total								2.E-07					1.E-03
			Dermal	Arsenic	9.6E+00	mg/kg	6.6E-08	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	1.E-07	1.9E-07	mg/kg/day	3.0E-04	mg/kg/day	6.E-04
			Exp. Route Total								1.E-07					6.E-04
		Exposure Point Total									3.E-07					2.E-03
	Exposure Medium Total										3.E-07					2.E-03
Groundwater Seep Sediment Total											3.E-07					2.E-03
Groundwater Seeps	Surface Water	Surface Water Floodplain Area 1A	Ingestion	Manganese	4.0E-01	mg/L	1.3E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.9E-06	mg/kg/day	2.4E-02	mg/kg/day	2.E-04
				Ammonia	5.1E-01	mg/L	1.7E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.0E-06	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					2.E-04
			Dermal	Manganese	4.0E-04	mg/cm^3	7.7E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.2E-06	mg/kg/day	9.6E-04	mg/kg/day	2.E-03
				Ammonia	5.1E-04	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					2.E-03
		Exposure Point Total									0.E+00					2.E-03
	Exposure Medium Total										0.E+00					2.E-03
Groundwater Seep Surface Water Total											0.E+00					2.E-03
Fish Tissue	Fish Tissue	DePue Lake Lake-wide	Ingestion	Lead	2.0E-01	mg/kg	1.2E-01	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.4E-01	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					0.E+00
		Exposure Point Total									0.E+00					0.E+00
	Exposure Medium Total										0.E+00					0.E+00
Fish Tissue Total											0.E+00					0.E+00
Total of Receptor Risks Across All Media											3.E-06	Total of Receptor Hazards Across All Media				1.E-02

Note:
NA = Not available
-- = Consituent is a mutagen, intakes/risk calculations are detailed in Appendix F.

Table 7.11.CTE
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor: Angler (Shoreline)
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Sediment	Sediment	DePue Lake	Ingestion													
		Surface Sediment		Benzo(a)anthracene	4.0E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	1.E-08	3.1E-08	mg/kg/day	NA	mg/kg/day	NA
		Sediment Area 1A		Benzo(a)pyrene	3.4E+00	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	9.E-08	2.7E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	2.8E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	7.E-09	2.2E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	1.2E+00	mg/kg	1.2E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	9.4E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	3.0E+00	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	8.E-10	2.3E-08	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	3.5E+00	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	9.E-11	2.7E-08	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	5.5E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	1.E-08	4.3E-09	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	1.7E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	4.E-09	1.3E-08	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	2.1E+00	mg/kg	2.1E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.6E-08	mg/kg/day	2.0E-02	mg/kg/day	8.E-07
				Arsenic	1.7E+01	mg/kg	1.0E-08	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	2.E-08	7.9E-08	mg/kg/day	3.0E-04	mg/kg/day	3.E-04
				Barium	4.2E+01	mg/kg	4.2E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.3E-07	mg/kg/day	2.0E-01	mg/kg/day	2.E-06
				Cadmium	8.1E+01	mg/kg	8.1E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	6.3E-07	mg/kg/day	1.0E-03	mg/kg/day	6.E-04
				Lead	2.7E+02	mg/kg	2.7E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.1E-06	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								1.E-07					9.E-04
			Dermal													
				Benzo(a)anthracene	4.0E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	6.E-09	1.9E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	3.4E+00	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	5.E-08	1.6E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	2.8E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	4.E-09	1.3E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	1.2E+00	mg/kg	7.2E-10	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.6E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	3.0E+00	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	5.E-10	1.4E-08	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	3.5E+00	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	5.E-11	1.6E-08	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	5.5E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	8.E-09	2.6E-09	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	1.7E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	3.E-09	7.9E-09	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	2.1E+00	mg/kg	1.3E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	9.7E-09	mg/kg/day	2.0E-02	mg/kg/day	5.E-07
				Arsenic	1.7E+01	mg/kg	2.3E-09	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	3.E-09	1.8E-08	mg/kg/day	3.0E-04	mg/kg/day	6.E-05
				Barium	4.2E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.4E-02	mg/kg/day	NA
				Cadmium	8.1E+01	mg/kg	3.7E-10	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.9E-09	mg/kg/day	2.5E-05	mg/kg/day	1.E-04
				Lead	2.7E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								8.E-08					2.E-04
		Exposure Point Total									2.E-07					1.E-03
	Exposure Medium Total										2.E-07					1.E-03
Sediment Soil Total											2.E-07					1.E-03
Surface Water	Surface Water	DePue Lake	Ingestion													
		Surface Water		Cadmium	3.5E-03	mg/L	1.8E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.4E-08	mg/kg/day	5.0E-04	mg/kg/day	3.E-05
		Eastern Portion of		Lead	2.0E-02	mg/L	1.0E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.8E-08	mg/kg/day	NA	mg/kg/day	NA
		Lake		Manganese	3.8E-01	mg/L	1.9E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.5E-06	mg/kg/day	2.4E-02	mg/kg/day	6.E-05
				Ammonia	7.3E-01	mg/L	3.7E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.8E-06	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.6E+02	mg/L	7.9E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	6.2E-04	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	1.3E+01	mg/L	6.5E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.0E-05	mg/kg/day	1.6E+00	mg/kg/day	3.E-05
				Phosphorus	2.7E+00	mg/L	1.3E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.0E-05	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					1.E-04

Table 7.11.CTE
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor: Angler (Shoreline)
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface Water	Surface Water	DePue Lake Surface Water Eastern Portion of Lake	Dermal													
				Cadmium	3.5E-06	mg/cm^3	1.0E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.8E-09	mg/kg/day	1.3E-05	mg/kg/day	6.E-04
				Lead	2.0E-05	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	3.8E-04	mg/cm^3	1.1E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	8.4E-07	mg/kg/day	9.6E-04	mg/kg/day	9.E-04
				Ammonia	7.3E-04	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.6E-01	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	1.3E-02	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.6E+00	mg/kg/day	NA
				Phosphorus	2.7E-03	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					1.E-03
		Exposure Point Total									0.E+00					2.E-03
	Exposure Medium Total										0.E+00					2.E-03
Surface Water Total											0.E+00					2.E-03
Groundwater Seeps	Sediment	Sediment Floodplain Area 1A	Ingestion	Arsenic	9.6E+00	mg/kg	8.7E-09	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	1.E-08	6.8E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
			Exp. Route Total								1.E-08					2.E-04
			Dermal	Arsenic	9.6E+00	mg/kg	2.0E-09	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	3.E-09	1.5E-08	mg/kg/day	3.0E-04	mg/kg/day	5.E-05
			Exp. Route Total								3.E-09					5.E-05
		Exposure Point Total									2.E-08					3.E-04
	Exposure Medium Total										2.E-08					3.E-04
Groundwater Seep Sediment Total											2.E-08					3.E-04
Groundwater Seeps	Surface Water	Surface Water Floodplain Area 1A	Ingestion	Manganese	4.0E-01	mg/L	2.0E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.6E-06	mg/kg/day	2.4E-02	mg/kg/day	7.E-05
				Ammonia	5.1E-01	mg/L	2.6E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.0E-06	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					7.E-05
			Dermal	Manganese	4.0E-04	mg/cm^3	1.2E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	8.9E-07	mg/kg/day	9.6E-04	mg/kg/day	9.E-04
				Ammonia	5.1E-04	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					9.E-04
		Exposure Point Total									0.E+00					1.E-03
	Exposure Medium Total										0.E+00					1.E-03
Groundwater Seep Surface Water Total											0.E+00					1.E-03
Fish Tissue	Fish Tissue	DePue Lake Lake-wide	Ingestion	Lead	2.0E-01	mg/kg	7.1E-03	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.5E-02	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					0.E+00
		Exposure Point Total									0.E+00					0.E+00
	Exposure Medium Total										0.E+00					0.E+00
Fish Tissue Total											0.E+00					0.E+00
Total of Receptor Risks Across All Media											2.E-07	Total of Receptor Hazards Across All Media				4.E-03

Note:
NA = Not available
-- = Consituent is a mutagen, intakes/risk calculations are detailed in Appendix F.

Table 7.12.RME
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor: Angler (Shoreline)
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Sediment	Sediment	DePue Lake	Ingestion													
		Surface Sediment		Benzo(a)anthracene	4.0E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	7.E-07	1.5E-06	mg/kg/day	NA	mg/kg/day	NA
		Sediment Area 1A		Benzo(a)pyrene	3.4E+00	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	6.E-06	1.2E-06	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	2.8E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	5.E-07	1.0E-06	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	1.2E+00	mg/kg	3.8E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.4E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	3.0E+00	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	5.E-08	1.1E-06	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	3.5E+00	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	6.E-09	1.3E-06	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	5.5E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	9.E-07	2.0E-07	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	1.7E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	3.E-07	6.2E-07	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	2.1E+00	mg/kg	6.6E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.7E-07	mg/kg/day	2.0E-02	mg/kg/day	4.E-05
				Arsenic	1.7E+01	mg/kg	3.2E-07	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	5.E-07	3.7E-06	mg/kg/day	3.0E-04	mg/kg/day	1.E-02
				Barium	4.2E+01	mg/kg	1.3E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.5E-05	mg/kg/day	2.0E-01	mg/kg/day	8.E-05
				Cadmium	8.1E+01	mg/kg	2.5E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.0E-05	mg/kg/day	1.0E-03	mg/kg/day	3.E-02
				Lead	2.7E+02	mg/kg	8.5E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	9.9E-05	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								8.E-06					4.E-02
			Dermal													
				Benzo(a)anthracene	4.0E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	2.E-07	4.6E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	3.4E+00	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	2.E-06	3.4E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	2.8E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	1.E-07	3.2E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	1.2E+00	mg/kg	1.2E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.4E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	3.0E+00	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	2.E-08	3.5E-07	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	3.5E+00	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	2.E-09	4.1E-07	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	5.5E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	3.E-07	6.4E-08	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	1.7E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	9.E-08	2.0E-07	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	2.1E+00	mg/kg	2.1E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.4E-07	mg/kg/day	2.0E-02	mg/kg/day	1.E-05
				Arsenic	1.7E+01	mg/kg	3.9E-08	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	6.E-08	4.5E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				Barium	4.2E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.4E-02	mg/kg/day	NA
				Cadmium	8.1E+01	mg/kg	6.2E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.2E-08	mg/kg/day	2.5E-05	mg/kg/day	3.E-03
				Lead	2.7E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								3.E-06					4.E-03
		Exposure Point Total									1.E-05					5.E-02
	Exposure Medium Total										1.E-05					5.E-02
Sediment Soil Total											1.E-05					5.E-02

Table 7.12.RME
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor: Angler (Shoreline)
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface Water	Surface Water	DePue Lake Surface Water Eastern Portion of Lake	Ingestion													
				Cadmium	3.5E-03	mg/L	1.4E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.6E-07	mg/kg/day	5.0E-04	mg/kg/day	3.E-04
				Lead	2.0E-02	mg/L	7.8E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	9.1E-07	mg/kg/day	NA	mg/kg/day	NA
				Manganese	3.8E-01	mg/L	1.5E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.7E-05	mg/kg/day	2.4E-02	mg/kg/day	7.E-04
				Ammonia	7.3E-01	mg/L	2.8E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.3E-05	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.6E+02	mg/L	6.2E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.2E-03	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	1.3E+01	mg/L	5.0E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.9E-04	mg/kg/day	1.6E+00	mg/kg/day	4.E-04
				Phosphorus	2.7E+00	mg/L	1.0E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.2E-04	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					1.E-03
			Dermal													
				Cadmium	3.5E-06	mg/cm^3	3.3E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.9E-08	mg/kg/day	1.3E-05	mg/kg/day	3.E-03
				Lead	2.0E-05	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	3.8E-04	mg/cm^3	3.6E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.2E-06	mg/kg/day	9.6E-04	mg/kg/day	4.E-03
				Ammonia	7.3E-04	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.6E-01	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	1.3E-02	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.6E+00	mg/kg/day	NA
				Phosphorus	2.7E-03	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					7.E-03
		Exposure Point Total									0.E+00					9.E-03
	Exposure Medium Total										0.E+00					9.E-03
Surface Water Total											0.E+00					9.E-03

Table 7.12.RME
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor: Angler (Shoreline)
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk			Intake/Exposure Concentration		RfD/RfC		
					Value	Units	Value	Units	Value	Units	Cancer Risk	Value	Units	Value	Units	Hazard Quotient
Groundwater Seeps	Sediment	Sediment Floodplain Area 1A	Ingestion	Arsenic	9.6E+00	mg/kg	2.7E-07	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	4.E-07	3.2E-06	mg/kg/day	3.0E-04	mg/kg/day	1.E-02
			Exp. Route Total								4.E-07					1.E-02
			Dermal	Arsenic	9.6E+00	mg/kg	3.3E-08	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	5.E-08	3.9E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
			Exp. Route Total								5.E-08					1.E-03
		Exposure Point Total									5.E-07					1.E-02
	Exposure Medium Total										5.E-07					1.E-02
Groundwater Seep Sediment Total											5.E-07					1.E-02
Groundwater Seeps	Surface Water	Surface Water Floodplain Area 1A	Ingestion	Manganese	4.0E-01	mg/L	1.6E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.8E-05	mg/kg/day	2.4E-02	mg/kg/day	8.E-04
				Ammonia	5.1E-01	mg/L	2.0E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.3E-05	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					8.E-04
			Dermal	Manganese	4.0E-04	mg/cm^3	3.8E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.5E-06	mg/kg/day	9.6E-04	mg/kg/day	5.E-03
				Ammonia	5.1E-04	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					5.E-03
		Exposure Point Total									0.E+00					5.E-03
	Exposure Medium Total										0.E+00					5.E-03
Groundwater Seep Surface Water Total											0.E+00					5.E-03
Fish Tissue	Fish Tissue	DePue Lake Lake-wide	Ingestion	Lead	2.0E-01	mg/kg	3.2E-03	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.7E-02	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					0.E+00
		Exposure Point Total									0.E+00					0.E+00
	Exposure Medium Total										0.E+00					0.E+00
Fish Tissue Total											0.E+00					0.E+00
Total of Receptor Risks Across All Media											1.E-05	Total of Receptor Hazards Across All Media				7.E-02

Note:
NA = Not available
-- = Consituent is a mutagen, intakes/risk calculations are detailed in Appendix F.

Table 7.12.CTE
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor: Angler (Shoreline)
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Sediment	Sediment	DePue Lake	Ingestion													
		Surface Sediment		Benzo(a)anthracene	4.0E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	1.E-07	2.9E-07	mg/kg/day	NA	mg/kg/day	NA
		Sediment Area 1A		Benzo(a)pyrene	3.4E+00	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	1.E-06	2.5E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	2.8E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	9.E-08	2.0E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	1.2E+00	mg/kg	7.5E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	8.8E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	3.0E+00	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	1.E-08	2.2E-07	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	3.5E+00	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	1.E-09	2.6E-07	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	5.5E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	2.E-07	4.0E-08	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	1.7E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	6.E-08	1.2E-07	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	2.1E+00	mg/kg	1.3E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.5E-07	mg/kg/day	2.0E-02	mg/kg/day	8.E-06
				Arsenic	1.7E+01	mg/kg	6.4E-08	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	1.E-07	7.4E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				Barium	4.2E+01	mg/kg	2.6E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.1E-06	mg/kg/day	2.0E-01	mg/kg/day	2.E-05
				Cadmium	8.1E+01	mg/kg	5.1E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.9E-06	mg/kg/day	1.0E-03	mg/kg/day	6.E-03
				Lead	2.7E+02	mg/kg	1.7E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.0E-05	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								2.E-06					8.E-03
			Dermal													
				Benzo(a)anthracene	4.0E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	2.E-08	3.7E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	3.4E+00	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	1.E-07	3.2E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	2.8E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	1.E-08	2.6E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	1.2E+00	mg/kg	9.5E-10	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.1E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	3.0E+00	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	1.E-09	2.8E-08	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	3.5E+00	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	1.E-10	3.2E-08	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	5.5E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	2.E-08	5.1E-09	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	1.7E+00	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	7.E-09	1.6E-08	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	2.1E+00	mg/kg	1.7E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.9E-08	mg/kg/day	2.0E-02	mg/kg/day	1.E-06
				Arsenic	1.7E+01	mg/kg	3.1E-09	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	5.E-09	3.6E-08	mg/kg/day	3.0E-04	mg/kg/day	1.E-04
				Barium	4.2E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.4E-02	mg/kg/day	NA
				Cadmium	8.1E+01	mg/kg	4.9E-10	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.8E-09	mg/kg/day	2.5E-05	mg/kg/day	2.E-04
				Lead	2.7E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								2.E-07					4.E-04
		Exposure Point Total									2.E-06					9.E-03
	Exposure Medium Total										2.E-06					9.E-03
Sediment Soil Total											2.E-06					9.E-03

Table 7.12.CTE
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor: Angler (Shoreline)
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Water	Surface Water	DePue Lake Surface Water Eastern Portion of Lake	Ingestion													
				Cadmium	3.5E-03	mg/L	5.5E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	6.4E-08	mg/kg/day	5.0E-04	mg/kg/day	1.E-04
				Lead	2.0E-02	mg/L	3.1E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.7E-07	mg/kg/day	NA	mg/kg/day	NA
				Manganese	3.8E-01	mg/L	5.9E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	6.9E-06	mg/kg/day	2.4E-02	mg/kg/day	3.E-04
				Ammonia	7.3E-01	mg/L	1.1E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.3E-05	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.6E+02	mg/L	2.5E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.9E-03	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	1.3E+01	mg/L	2.0E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.3E-04	mg/kg/day	1.6E+00	mg/kg/day	1.E-04
				Phosphorus	2.7E+00	mg/L	4.2E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.9E-05	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					6.E-04
			Dermal													
				Cadmium	3.5E-06	mg/cm^3	1.3E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.6E-08	mg/kg/day	1.3E-05	mg/kg/day	1.E-03
				Lead	2.0E-05	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	3.8E-04	mg/cm^3	1.4E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.7E-06	mg/kg/day	9.6E-04	mg/kg/day	2.E-03
				Ammonia	7.3E-04	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.6E-01	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	1.3E-02	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.6E+00	mg/kg/day	NA
				Phosphorus	2.7E-03	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					3.E-03
		Exposure Point Total									0.E+00					4.E-03
	Exposure Medium Total										0.E+00					4.E-03
Surface Water Total											0.E+00					4.E-03

Table 7.12.CTE
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor: Angler (Shoreline)
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Groundwater Seeps	Sediment	Sediment Floodplain Area 1A	Ingestion	Arsenic	9.6E+00	mg/kg	5.4E-08	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	8.E-08	6.3E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
			Exp. Route Total								8.E-08					2.E-03
			Dermal	Arsenic	9.6E+00	mg/kg	2.6E-09	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	4.E-09	3.1E-08	mg/kg/day	3.0E-04	mg/kg/day	1.E-04
			Exp. Route Total								4.E-09					1.E-04
		Exposure Point Total									9.E-08					2.E-03
	Exposure Medium Total										9.E-08					2.E-03
Groundwater Seep Sediment Total											9.E-08					2.E-03
Groundwater Seeps	Surface Water	Surface Water Floodplain Area 1A	Ingestion	Manganese	4.0E-01	mg/L	6.3E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.3E-06	mg/kg/day	2.4E-02	mg/kg/day	3.E-04
				Ammonia	5.1E-01	mg/L	8.0E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	9.3E-06	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					3.E-04
			Dermal	Manganese	4.0E-04	mg/cm^3	1.5E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.8E-06	mg/kg/day	9.6E-04	mg/kg/day	2.E-03
				Ammonia	5.1E-04	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					2.E-03
		Exposure Point Total									0.E+00					2.E-03
	Exposure Medium Total										0.E+00					2.E-03
Groundwater Seep Surface Water Total											0.E+00					2.E-03
Fish Tissue	Fish Tissue	DePue Lake Lake-wide	Ingestion	Lead	2.0E-01	mg/kg	5.0E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.9E-03	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					0.E+00
		Exposure Point Total									0.E+00					0.E+00
	Exposure Medium Total										0.E+00					0.E+00
Fish Tissue Total											0.E+00					0.E+00
										Total of Receptor Risks Across All Media	2.E-06			Total of Receptor Hazards Across All Media		2.E-02

Note:
NA = Not available
-- = Consituent is a mutagen, intakes/risk calculations are detailed in Appendix F.

Table 7.13.RME
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor: Village Park Maintenance Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Sediment	Sediment	DePue Lake Surface and Subsurface Sediment Sediment Area 1A	Ingestion													
				Benzo(a)anthracene	3.8E+00	mg/kg	5.9E-08	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	4.E-08	1.7E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	3.3E+00	mg/kg	5.1E-08	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	4.E-07	1.4E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	2.6E+00	mg/kg	4.1E-08	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	3.E-08	1.2E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	1.1E+00	mg/kg	1.7E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.9E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	2.8E+00	mg/kg	4.5E-08	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	3.E-09	1.2E-07	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	3.3E+00	mg/kg	5.1E-08	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	4.E-10	1.4E-07	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	5.2E-01	mg/kg	8.2E-09	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	6.E-08	2.3E-08	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	1.6E+00	mg/kg	2.5E-08	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	2.E-08	6.9E-08	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	2.9E+00	mg/kg	4.5E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.3E-07	mg/kg/day	2.0E-02	mg/kg/day	6.E-06
				Arsenic	1.4E+01	mg/kg	1.3E-07	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	2.E-07	3.7E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Barium	5.5E+02	mg/kg	8.6E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.4E-05	mg/kg/day	2.0E-01	mg/kg/day	1.E-04
				Cadmium	7.9E+01	mg/kg	1.2E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.5E-06	mg/kg/day	1.0E-03	mg/kg/day	3.E-03
				Iron	2.3E+04	mg/kg	3.6E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.0E-03	mg/kg/day	7.0E-01	mg/kg/day	1.E-03
				Lead	2.4E+02	mg/kg	3.7E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.0E-05	mg/kg/day	NA	mg/kg/day	NA
				Manganese	6.5E+02	mg/kg	1.0E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.9E-05	mg/kg/day	1.4E-01	mg/kg/day	2.E-04
				Zinc	4.6E+03	mg/kg	7.3E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.0E-04	mg/kg/day	3.0E-01	mg/kg/day	7.E-04
			Exp. Route Total								7.E-07					6.E-03
			Dermal													
				Benzo(a)anthracene	3.8E+00	mg/kg	3.6E-08	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	3.E-08	1.0E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	3.3E+00	mg/kg	3.1E-08	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	2.E-07	8.6E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	2.6E+00	mg/kg	2.5E-08	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	2.E-08	6.9E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	1.1E+00	mg/kg	1.0E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.9E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	2.8E+00	mg/kg	2.7E-08	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	2.E-09	7.5E-08	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	3.3E+00	mg/kg	3.1E-08	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	2.E-10	8.6E-08	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	5.2E-01	mg/kg	4.9E-09	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	4.E-08	1.4E-08	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	1.6E+00	mg/kg	1.5E-08	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	1.E-08	4.1E-08	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	2.9E+00	mg/kg	2.7E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.6E-08	mg/kg/day	2.0E-02	mg/kg/day	4.E-06
				Arsenic	1.4E+01	mg/kg	3.1E-08	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	5.E-08	8.6E-08	mg/kg/day	3.0E-04	mg/kg/day	3.E-04
				Barium	5.5E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.4E-02	mg/kg/day	NA
				Cadmium	7.9E+01	mg/kg	5.7E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.6E-08	mg/kg/day	2.5E-05	mg/kg/day	6.E-04
				Iron	2.3E+04	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	7.0E-01	mg/kg/day	NA
				Lead	2.4E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	6.5E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	5.6E-03	mg/kg/day	NA
				Zinc	4.6E+03	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-01	mg/kg/day	NA
			Exp. Route Total								4.E-07					9.E-04
		Exposure Point Total									1.E-06					7.E-03
	Exposure Medium Total										1.E-06					7.E-03
Sediment Soil Total											1.E-06					7.E-03

Table 7.13.RME
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor: Village Park Maintenance Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface Water	Surface Water	DePue Lake Surface Water Eastern Portion of Lake	Ingestion													
				Cadmium	3.5E-03	mg/L	1.4E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.8E-08	mg/kg/day	5.0E-04	mg/kg/day	8.E-05
				Lead	2.0E-02	mg/L	7.8E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.2E-07	mg/kg/day	NA	mg/kg/day	NA
				Manganese	3.8E-01	mg/L	1.5E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.1E-06	mg/kg/day	2.4E-02	mg/kg/day	2.E-04
				Ammonia	7.3E-01	mg/L	2.8E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	8.0E-06	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.6E+02	mg/L	6.2E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.7E-03	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	1.3E+01	mg/L	5.0E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.4E-04	mg/kg/day	1.6E+00	mg/kg/day	9.E-05
				Phosphorus	2.7E+00	mg/L	1.0E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.9E-05	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					3.E-04
			Dermal													
				Cadmium	3.5E-06	mg/cm^3	3.1E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	8.8E-09	mg/kg/day	1.3E-05	mg/kg/day	7.E-04
				Lead	2.0E-05	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	3.8E-04	mg/cm^3	3.4E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	9.5E-07	mg/kg/day	9.6E-04	mg/kg/day	1.E-03
				Ammonia	7.3E-04	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.6E-01	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	1.3E-02	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.6E+00	mg/kg/day	NA
				Phosphorus	2.7E-03	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					2.E-03
		Exposure Point Total									0.E+00					2.E-03
		Exposure Medium Total									0.E+00					2.E-03
Surface Water Total											0.E+00					2.E-03
Groundwater Seeps	Sediment	Sediment Floodplain Area 1A	Ingestion													
				Arsenic	9.6E+00	mg/kg	1.4E-07	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	2.E-07	3.8E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
			Exp. Route Total								2.E-07					1.E-03
			Dermal													
				Arsenic	9.6E+00	mg/kg	3.1E-08	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	5.E-08	8.7E-08	mg/kg/day	3.0E-04	mg/kg/day	3.E-04
			Exp. Route Total								5.E-08					3.E-04
		Exposure Point Total									2.E-07					2.E-03
		Exposure Medium Total									2.E-07					2.E-03
Groundwater Seep Sediment Total											2.E-07					2.E-03
Groundwater Seeps	Surface Water	Surface Water Floodplain Area 1A	Ingestion													
				Manganese	4.0E-01	mg/L	1.6E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.4E-06	mg/kg/day	2.4E-02	mg/kg/day	2.E-04
				Ammonia	5.1E-01	mg/L	2.0E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.6E-06	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					2.E-04
			Dermal													
				Manganese	4.0E-04	mg/cm^3	3.6E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.0E-06	mg/kg/day	9.6E-04	mg/kg/day	1.E-03
				Ammonia	5.1E-04	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					1.E-03
		Exposure Point Total									0.E+00					1.E-03
		Exposure Medium Total									0.E+00					1.E-03
Groundwater Seep Surface Water Total											0.E+00					1.E-03
											Total of Receptor Risks Across All Media					1.E-02
											1.E-06	Total of Receptor Hazards Across All Media				

Note:
NA = Not available

Table 7.13.CTE
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor: Village Park Maintenance Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Sediment	Sediment	DePue Lake	Ingestion													
		Surface and		Benzo(a)anthracene	3.8E+00	mg/kg	5.4E-09	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	4.E-09	4.2E-08	mg/kg/day	NA	mg/kg/day	NA
		Subsurface Sediment		Benzo(a)pyrene	3.3E+00	mg/kg	4.6E-09	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	3.E-08	3.6E-08	mg/kg/day	NA	mg/kg/day	NA
		Sediment Area 1A		Benzo(b)fluoranthene	2.6E+00	mg/kg	3.7E-09	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	3.E-09	2.9E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	1.1E+00	mg/kg	1.6E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.2E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	2.8E+00	mg/kg	4.0E-09	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	3.E-10	3.1E-08	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	3.3E+00	mg/kg	4.6E-09	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	3.E-11	3.6E-08	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	5.2E-01	mg/kg	7.3E-10	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	5.E-09	5.7E-09	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	1.6E+00	mg/kg	2.2E-09	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	2.E-09	1.7E-08	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	2.9E+00	mg/kg	4.1E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.2E-08	mg/kg/day	2.0E-02	mg/kg/day	2.E-06
				Arsenic	1.4E+01	mg/kg	1.2E-08	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	2.E-08	9.3E-08	mg/kg/day	3.0E-04	mg/kg/day	3.E-04
				Barium	5.5E+02	mg/kg	7.7E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	6.0E-06	mg/kg/day	2.0E-01	mg/kg/day	3.E-05
				Cadmium	7.9E+01	mg/kg	1.1E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	8.7E-07	mg/kg/day	1.0E-03	mg/kg/day	9.E-04
				Iron	2.3E+04	mg/kg	3.2E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.5E-04	mg/kg/day	7.0E-01	mg/kg/day	4.E-04
				Lead	2.4E+02	mg/kg	3.3E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.6E-06	mg/kg/day	NA	mg/kg/day	NA
				Manganese	6.5E+02	mg/kg	9.2E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.1E-06	mg/kg/day	1.4E-01	mg/kg/day	5.E-05
				Zinc	4.6E+03	mg/kg	6.5E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.1E-05	mg/kg/day	3.0E-01	mg/kg/day	2.E-04
			Exp. Route Total								7.E-08					2.E-03
			Dermal													
				Benzo(a)anthracene	3.8E+00	mg/kg	3.2E-09	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	2.E-09	2.5E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	3.3E+00	mg/kg	2.8E-09	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	2.E-08	2.1E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	2.6E+00	mg/kg	2.2E-09	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	2.E-09	1.7E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	1.1E+00	mg/kg	9.4E-10	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.3E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	2.8E+00	mg/kg	2.4E-09	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	2.E-10	1.9E-08	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	3.3E+00	mg/kg	2.8E-09	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	2.E-11	2.1E-08	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	5.2E-01	mg/kg	4.4E-10	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	3.E-09	3.4E-09	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	1.6E+00	mg/kg	1.3E-09	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	1.E-09	1.0E-08	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	2.9E+00	mg/kg	2.4E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.9E-08	mg/kg/day	2.0E-02	mg/kg/day	9.E-07
				Arsenic	1.4E+01	mg/kg	2.8E-09	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	4.E-09	2.1E-08	mg/kg/day	3.0E-04	mg/kg/day	7.E-05
				Barium	5.5E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.4E-02	mg/kg/day	NA
				Cadmium	7.9E+01	mg/kg	5.1E-10	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.0E-09	mg/kg/day	2.5E-05	mg/kg/day	2.E-04
				Iron	2.3E+04	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	7.0E-01	mg/kg/day	NA
				Lead	2.4E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	6.5E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	5.6E-03	mg/kg/day	NA
				Zinc	4.6E+03	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-01	mg/kg/day	NA
			Exp. Route Total								3.E-08					2.E-04
		Exposure Point Total									1.E-07					2.E-03
	Exposure Medium Total										1.E-07					2.E-03
Sediment Soil Total											1.E-07					2.E-03

Table 7.13.CTE
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor: Village Park Maintenance Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Water	Surface Water	DePue Lake Surface Water Eastern Portion of Lake	Ingestion													
				Cadmium	3.5E-03	mg/L	2.5E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.9E-08	mg/kg/day	5.0E-04	mg/kg/day	4.E-05
				Lead	2.0E-02	mg/L	1.4E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.1E-07	mg/kg/day	NA	mg/kg/day	NA
				Manganese	3.8E-01	mg/L	2.6E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.1E-06	mg/kg/day	2.4E-02	mg/kg/day	9.E-05
				Ammonia	7.3E-01	mg/L	5.1E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.0E-06	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.6E+02	mg/L	1.1E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	8.6E-04	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	1.3E+01	mg/L	9.0E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.0E-05	mg/kg/day	1.6E+00	mg/kg/day	4.E-05
				Phosphorus	2.7E+00	mg/L	1.9E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.5E-05	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					2.E-04
Surface Water	Surface Water	DePue Lake Surface Water Eastern Portion of Lake	Dermal													
				Cadmium	3.5E-06	mg/cm^3	5.7E-10	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.4E-09	mg/kg/day	1.3E-05	mg/kg/day	3.E-04
				Lead	2.0E-05	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	3.8E-04	mg/cm^3	6.1E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.7E-07	mg/kg/day	9.6E-04	mg/kg/day	5.E-04
				Ammonia	7.3E-04	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.6E-01	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	1.3E-02	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.6E+00	mg/kg/day	NA
				Phosphorus	2.7E-03	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					8.E-04
		Exposure Point Total									0.E+00					1.E-03
	Exposure Medium Total										0.E+00					1.E-03
Surface Water Total											0.E+00					1.E-03
Groundwater Seeps	Sediment	Sediment Floodplain Area 1A	Ingestion													
				Arsenic	9.6E+00	mg/kg	1.2E-08	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	2.E-08	9.5E-08	mg/kg/day	3.0E-04	mg/kg/day	3.E-04
			Exp. Route Total								2.E-08					3.E-04
			Dermal													
				Arsenic	9.6E+00	mg/kg	2.8E-09	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	4.E-09	2.2E-08	mg/kg/day	3.0E-04	mg/kg/day	7.E-05
			Exp. Route Total								4.E-09					7.E-05
		Exposure Point Total									2.E-08					4.E-04
	Exposure Medium Total										2.E-08					4.E-04
Groundwater Seep Sediment Total											2.E-08					4.E-04
Groundwater Seeps	Surface Water	Surface Water Floodplain Area 1A	Ingestion													
				Manganese	4.0E-01	mg/L	2.8E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.2E-06	mg/kg/day	2.4E-02	mg/kg/day	9.E-05
				Ammonia	5.1E-01	mg/L	3.6E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.8E-06	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					9.E-05
			Dermal													
				Manganese	4.0E-04	mg/cm^3	6.5E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.1E-07	mg/kg/day	9.6E-04	mg/kg/day	5.E-04
				Ammonia	5.1E-04	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					5.E-04
		Exposure Point Total									0.E+00					6.E-04
	Exposure Medium Total										0.E+00					6.E-04
Groundwater Seep Surface Water Total											0.E+00					6.E-04
										Total of Receptor Risks Across All Media	1.E-07			Total of Receptor Hazards Across All Media		4.E-03

Note:
NA = Not available

Table 7.14.RME
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1B
Receptor: Utility Maintenance Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk			Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units	Cancer Risk	Value	Units	Value	Units	
Surface and Subsurface Soil	Surface and Subsurface Soil	Floodplain Surface and Subsurface Soil Floodplain Area 1B WWTP Transect LL-5	Ingestion	Benzo(a)anthracene	7.6E-01	mg/kg	1.8E-08	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	1.E-08	4.9E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	9.5E-01	mg/kg	2.2E-08	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	2.E-07	6.1E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	1.2E+00	mg/kg	2.8E-08	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	2.E-08	7.7E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	3.7E-01	mg/kg	8.5E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.4E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	9.0E-01	mg/kg	2.1E-08	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	2.E-09	5.8E-08	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	1.3E+00	mg/kg	3.0E-08	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	2.E-10	8.4E-08	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	3.5E-01	mg/kg	8.1E-09	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	6.E-08	2.3E-08	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	6.5E-01	mg/kg	1.5E-08	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	1.E-08	4.2E-08	mg/kg/day	NA	mg/kg/day	NA
				Aroclor 1254*	1.5E-01	mg/kg	3.5E-09	mg/kg/day	2.0E+00	$(mg/kg/day)^{-1}$	7.E-09	9.7E-09	mg/kg/day	2.0E-05	mg/kg/day	5.E-04
				Dieldrin*	8.8E-03	mg/kg	2.0E-10	mg/kg/day	1.6E+01	$(mg/kg/day)^{-1}$	3.E-09	5.7E-10	mg/kg/day	5.0E-05	mg/kg/day	1.E-05
				Antimony*	4.1E+00	mg/kg	9.4E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.6E-07	mg/kg/day	4.0E-04	mg/kg/day	7.E-04
				Arsenic	2.3E+02	mg/kg	3.1E-06	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	5.E-06	8.8E-06	mg/kg/day	3.0E-04	mg/kg/day	3.E-02
				Barium	2.2E+03	mg/kg	5.1E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.4E-04	mg/kg/day	2.0E-01	mg/kg/day	7.E-04
				Cadmium	7.9E+02	mg/kg	1.8E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.1E-05	mg/kg/day	1.0E-03	mg/kg/day	5.E-02
				Cobalt	1.8E+01	mg/kg	4.1E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.1E-06	mg/kg/day	3.0E-04	mg/kg/day	4.E-03
				Copper	1.2E+03	mg/kg	2.8E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.8E-05	mg/kg/day	4.0E-02	mg/kg/day	2.E-03
				Cyanide *	3.2E+01	mg/kg	7.4E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.1E-06	mg/kg/day	2.0E-02	mg/kg/day	1.E-04
				Iron	4.2E+04	mg/kg	9.6E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.7E-03	mg/kg/day	7.0E-01	mg/kg/day	4.E-03
				Lead	1.6E+03	mg/kg	3.7E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.0E-04	mg/kg/day	NA	mg/kg/day	NA
				Manganese	9.8E+02	mg/kg	2.3E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	6.4E-05	mg/kg/day	1.4E-01	mg/kg/day	5.E-04
				Mercury	6.9E+00	mg/kg	1.6E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.5E-07	mg/kg/day	1.0E-04	mg/kg/day	4.E-03
				Selenium*	1.5E+01	mg/kg	3.4E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	9.4E-07	mg/kg/day	5.0E-03	mg/kg/day	2.E-04
				Silver*	1.9E+01	mg/kg	4.3E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.2E-06	mg/kg/day	5.0E-03	mg/kg/day	2.E-04
				Zinc	5.7E+04	mg/kg	1.3E-03	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.7E-03	mg/kg/day	3.0E-01	mg/kg/day	1.E-02
				Fluoride	3.4E+01	mg/kg	7.8E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.2E-06	mg/kg/day	4.0E-02	mg/kg/day	5.E-05
			Exp. Route Total								5.E-06					1.E-01
			Dermal													
				Benzo(a)anthracene	7.6E-01	mg/kg	6.8E-09	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	5.E-09	1.9E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	9.5E-01	mg/kg	8.5E-09	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	6.E-08	2.4E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	1.2E+00	mg/kg	1.1E-08	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	8.E-09	3.0E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	3.7E-01	mg/kg	3.3E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	9.3E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	9.0E-01	mg/kg	8.1E-09	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	6.E-10	2.3E-08	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	1.3E+00	mg/kg	1.2E-08	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	9.E-11	3.3E-08	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	3.5E-01	mg/kg	3.1E-09	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	2.E-08	8.8E-09	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	6.5E-01	mg/kg	5.8E-09	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	4.E-09	1.6E-08	mg/kg/day	NA	mg/kg/day	NA
				Aroclor 1254*	1.5E-01	mg/kg	1.5E-09	mg/kg/day	2.0E+00	$(mg/kg/day)^{-1}$	3.E-09	4.1E-09	mg/kg/day	2.0E-05	mg/kg/day	2.E-04
				Dieldrin*	8.8E-03	mg/kg	NA	mg/kg/day	1.6E+01	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	5.0E-05	mg/kg/day	NA
				Antimony*	4.1E+00	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	6.0E-05	mg/kg/day	NA
				Arsenic	2.3E+02	mg/kg	4.7E-07	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	7.E-07	1.3E-06	mg/kg/day	3.0E-04	mg/kg/day	4.E-03
				Barium	2.2E+03	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.4E-02	mg/kg/day	NA
				Cadmium	7.9E+02	mg/kg	5.5E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.5E-07	mg/kg/day	2.5E-05	mg/kg/day	6.E-03
				Cobalt	1.8E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-04	mg/kg/day	NA
				Copper	1.2E+03	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	4.0E-02	mg/kg/day	NA
				Cyanide *	3.2E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	2.0E-02	mg/kg/day	NA
				Iron	4.2E+04	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	7.0E-01	mg/kg/day	NA
				Lead	1.6E+03	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	9.8E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	5.6E-03	mg/kg/day	NA
				Mercury	6.9E+00	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.0E-04	mg/kg/day	NA
				Selenium*	1.5E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	5.0E-03	mg/kg/day	NA
				Silver*	1.9E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	2.0E-04	mg/kg/day	NA
				Zinc	5.7E+04	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-01	mg/kg/day	NA
				Fluoride	3.4E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	4.0E-02	mg/kg/day	NA
			Exp. Route Total								8.E-07					1.E-02
		Exposure Point Total									6.E-06					1.E-01
	Exposure Medium Total										6.E-06					1.E-01
Surface and Subsurface Soil Total											6.E-06					1.E-01

Table 7.14.RME
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1B
Receptor: Utility Maintenance Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk			Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units	Cancer Risk	Value	Units	Value	Units	
Sediment	Sediment	DePue Lake	Ingestion													
		Surface and		Benzo(a)anthracene	3.9E-01	mg/kg	1.1E-09	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	8.E-10	3.1E-09	mg/kg/day	NA	mg/kg/day	NA
		Subsurface Sediment		Benzo(a)pyrene	1.7E-01	mg/kg	4.8E-10	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	3.E-09	1.3E-09	mg/kg/day	NA	mg/kg/day	NA
		Sediment Area 1B		Benzo(b)fluoranthene	3.0E-01	mg/kg	8.4E-10	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	6.E-10	2.3E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	1.6E-01	mg/kg	4.5E-10	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	3.E-11	1.3E-09	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	5.6E-01	mg/kg	1.6E-09	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	1.E-11	4.4E-09	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	2.8E-02	mg/kg	7.8E-11	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	6.E-10	2.2E-10	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	4.8E-02	mg/kg	1.3E-10	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	1.E-12	3.8E-10	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	2.8E+00	mg/kg	7.8E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.2E-08	mg/kg/day	2.0E-02	mg/kg/day	1.E-06
				Arsenic	6.3E+01	mg/kg	1.1E-07	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	2.E-07	2.9E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Barium	2.1E+03	mg/kg	6.0E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.7E-05	mg/kg/day	2.0E-01	mg/kg/day	8.E-05
				Cadmium	6.3E+02	mg/kg	1.8E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.9E-06	mg/kg/day	1.0E-03	mg/kg/day	5.E-03
				Cobalt	1.3E+02	mg/kg	3.5E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	9.8E-07	mg/kg/day	3.0E-04	mg/kg/day	3.E-03
				Copper	7.8E+03	mg/kg	2.2E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	6.1E-05	mg/kg/day	4.0E-02	mg/kg/day	2.E-03
				Iron	5.8E+04	mg/kg	1.6E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.5E-04	mg/kg/day	7.0E-01	mg/kg/day	6.E-04
				Lead	3.2E+03	mg/kg	8.9E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.5E-05	mg/kg/day	NA	mg/kg/day	NA
				Manganese	3.5E+03	mg/kg	9.8E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.7E-05	mg/kg/day	1.4E-01	mg/kg/day	2.E-04
				Mercury	2.2E+01	mg/kg	6.2E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.7E-07	mg/kg/day	1.0E-04	mg/kg/day	2.E-03
				Zinc	3.9E+04	mg/kg	1.1E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.1E-04	mg/kg/day	3.0E-01	mg/kg/day	1.E-03
			Exp. Route Total								2.E-07					1.E-02
			Dermal													
				Benzo(a)anthracene	3.9E-01	mg/kg	6.5E-10	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	5.E-10	1.8E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	1.7E-01	mg/kg	2.8E-10	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	2.E-09	8.0E-10	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	3.0E-01	mg/kg	5.0E-10	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	4.E-10	1.4E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	1.6E-01	mg/kg	2.7E-10	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	2.E-11	7.5E-10	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	5.6E-01	mg/kg	9.4E-10	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	7.E-12	2.6E-09	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	2.8E-02	mg/kg	4.7E-11	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	3.E-10	1.3E-10	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	4.8E-02	mg/kg	8.0E-11	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	6.E-11	2.2E-10	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	2.8E+00	mg/kg	4.7E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.3E-08	mg/kg/day	2.0E-02	mg/kg/day	7.E-07
				Arsenic	6.3E+01	mg/kg	2.4E-08	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	4.E-08	6.8E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Barium	2.1E+03	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.4E-02	mg/kg/day	NA
				Cadmium	6.3E+02	mg/kg	8.1E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.3E-08	mg/kg/day	2.5E-05	mg/kg/day	9.E-04
				Cobalt	1.3E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-04	mg/kg/day	NA
				Copper	7.8E+03	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	4.0E-02	mg/kg/day	NA
				Iron	5.8E+04	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	7.0E-01	mg/kg/day	NA
				Lead	3.2E+03	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	3.5E+03	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	5.6E-03	mg/kg/day	NA
				Mercury	2.2E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.0E-04	mg/kg/day	NA
				Zinc	3.9E+04	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-01	mg/kg/day	NA
			Exp. Route Total								4.E-08					1.E-03
		Exposure Point Total									2.E-07					2.E-02
	Exposure Medium Total										2.E-07					2.E-02
Sediment Soil Total											2.E-07					2.E-02

Table 7.14.RME
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1B
Receptor: Utility Maintenance Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface Water	Surface Water	DePue Lake Surface Water Eastern Portion of Lake	Ingestion													
				Cadmium	3.5E-03	mg/L	2.4E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	6.8E-09	mg/kg/day	5.0E-04	mg/kg/day	1.E-05
				Lead	2.0E-02	mg/L	1.4E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.9E-08	mg/kg/day	NA	mg/kg/day	NA
				Manganese	3.8E-01	mg/L	2.6E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.4E-07	mg/kg/day	2.4E-02	mg/kg/day	3.E-05
				Ammonia	7.3E-01	mg/L	5.1E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.4E-06	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.6E+02	mg/L	1.1E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.1E-04	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	1.3E+01	mg/L	9.0E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.5E-05	mg/kg/day	1.6E+00	mg/kg/day	2.E-05
				Phosphorus	2.7E+00	mg/L	1.9E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.2E-06	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					6.E-05
			Dermal													
				Cadmium	3.5E-06	mg/cm^3	5.6E-10	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.6E-09	mg/kg/day	1.3E-05	mg/kg/day	1.E-04
				Lead	2.0E-05	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	3.8E-04	mg/cm^3	6.0E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.7E-07	mg/kg/day	9.6E-04	mg/kg/day	2.E-04
				Ammonia	7.3E-04	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.6E-01	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	1.3E-02	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.6E+00	mg/kg/day	NA
				Phosphorus	2.7E-03	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					3.E-04
		Exposure Point Total									0.E+00					4.E-04
	Exposure Medium Total										0.E+00					4.E-04
Surface Water Total											0.E+00					4.E-04
Groundwater Seeps	Sediment	Sediment Floodplain Area 1B	Ingestion													
				Arsenic	4.6E+01	mg/kg	1.1E-07	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	2.E-07	3.2E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Cadmium	1.4E+03	mg/kg	6.0E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.7E-05	mg/kg/day	1.0E-03	mg/kg/day	2.E-02
				Lead	3.2E+02	mg/kg	1.3E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.7E-06	mg/kg/day	NA	mg/kg/day	NA
				Manganese	8.8E+02	mg/kg	3.7E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.0E-05	mg/kg/day	1.4E-01	mg/kg/day	7.E-05
				Zinc	9.6E+04	mg/kg	4.0E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.1E-03	mg/kg/day	3.0E-01	mg/kg/day	4.E-03
			Exp. Route Total								2.E-07					2.E-02
			Dermal													
				Arsenic	4.6E+01	mg/kg	2.6E-08	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	4.E-08	7.4E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Cadmium	1.4E+03	mg/kg	2.7E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.7E-08	mg/kg/day	2.5E-05	mg/kg/day	3.E-03
				Lead	3.2E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	8.8E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	5.6E-03	mg/kg/day	NA
				Zinc	9.6E+04	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-01	mg/kg/day	NA
			Exp. Route Total								4.E-08					3.E-03
		Exposure Point Total									2.E-07					2.E-02
	Exposure Medium Total										2.E-07					2.E-02
Groundwater Seep Sediment Total											2.E-07					2.E-02
Groundwater Seeps	Surface Water	Surface Water Floodplain Area 1B	Ingestion													
				Cadmium	1.1E-02	mg/L	7.7E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.2E-08	mg/kg/day	5.0E-04	mg/kg/day	4.E-05
				Lead	1.5E-02	mg/L	1.0E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.9E-08	mg/kg/day	NA	mg/kg/day	NA
				Manganese	4.0E-01	mg/L	2.8E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.9E-07	mg/kg/day	2.4E-02	mg/kg/day	3.E-05
				Ammonia	6.8E-01	mg/L	4.7E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.3E-06	mg/kg/day	NA	mg/kg/day	NA
				Phosphorus	3.7E+00	mg/L	2.6E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.3E-06	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					8.E-05
			Dermal													
				Cadmium	1.1E-05	mg/cm^3	1.8E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.0E-09	mg/kg/day	1.3E-05	mg/kg/day	4.E-04
				Lead	1.5E-05	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	4.0E-04	mg/cm^3	6.5E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.8E-07	mg/kg/day	9.6E-04	mg/kg/day	2.E-04
				Ammonia	6.8E-04	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Phosphorus	3.7E-03	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					6.E-04
		Exposure Point Total									0.E+00					6.E-04
	Exposure Medium Total										0.E+00					6.E-04
Groundwater Seep Surface Water Total											0.E+00					6.E-04
										Total of Receptor Risks Across All Media	6.E-06			Total of Receptor Hazards Across All Media		2.E-01

Notes:
NA = Not available
* Identified as a soil COPC only because constituent exceeded soil-to-groundwater criteria.

Table 7.14.CTE
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1B
Receptor: Utility Maintenance Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk			Intake/Exposure Concentration		RfD/RfC		
					Value	Units	Value	Units	Value	Units	Cancer Risk	Value	Units	Value	Units	Hazard Quotient
Surface and Subsurface Soil	Surface and Subsurface Soil	Floodplain Surface and Subsurface Soil Floodplain Area 1B WWTP Transect LL-5	Ingestion	Benzo(a)anthracene	7.6E-01	mg/kg	9.6E-10	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	7.E-10	7.4E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	9.5E-01	mg/kg	1.2E-09	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	9.E-09	9.3E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	1.2E+00	mg/kg	1.5E-09	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	1.E-09	1.2E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	3.7E-01	mg/kg	4.7E-10	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.6E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	9.0E-01	mg/kg	1.1E-09	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	8.E-11	8.8E-09	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	1.3E+00	mg/kg	1.6E-09	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	1.E-11	1.3E-08	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	3.5E-01	mg/kg	4.4E-10	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	3.E-09	3.4E-09	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	6.5E-01	mg/kg	8.2E-10	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	6.E-10	6.4E-09	mg/kg/day	NA	mg/kg/day	NA
				Aroclor 1254*	1.5E-01	mg/kg	1.9E-10	mg/kg/day	2.0E+00	$(mg/kg/day)^{-1}$	4.E-10	1.5E-09	mg/kg/day	2.0E-05	mg/kg/day	7.E-05
				Dieldrin*	8.8E-03	mg/kg	1.1E-11	mg/kg/day	1.6E+01	$(mg/kg/day)^{-1}$	2.E-10	8.6E-11	mg/kg/day	5.0E-05	mg/kg/day	2.E-06
				Antimony*	4.1E+00	mg/kg	5.1E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.0E-08	mg/kg/day	4.0E-04	mg/kg/day	1.E-04
				Arsenic	2.3E+02	mg/kg	1.7E-07	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	3.E-07	1.3E-06	mg/kg/day	3.0E-04	mg/kg/day	4.E-03
				Barium	2.2E+03	mg/kg	2.8E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.2E-05	mg/kg/day	2.0E-01	mg/kg/day	1.E-04
				Cadmium	7.9E+02	mg/kg	1.0E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.8E-06	mg/kg/day	1.0E-03	mg/kg/day	8.E-03
				Cobalt	1.8E+01	mg/kg	2.2E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.7E-07	mg/kg/day	3.0E-04	mg/kg/day	6.E-04
				Copper	1.2E+03	mg/kg	1.5E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.2E-05	mg/kg/day	4.0E-02	mg/kg/day	3.E-04
				Cyanide *	3.2E+01	mg/kg	4.0E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.1E-07	mg/kg/day	2.0E-02	mg/kg/day	2.E-05
				Iron	4.2E+04	mg/kg	5.2E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.1E-04	mg/kg/day	7.0E-01	mg/kg/day	6.E-04
				Lead	1.6E+03	mg/kg	2.0E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.6E-05	mg/kg/day	NA	mg/kg/day	NA
				Manganese	9.8E+02	mg/kg	1.2E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	9.6E-06	mg/kg/day	1.4E-01	mg/kg/day	7.E-05
				Mercury	6.9E+00	mg/kg	8.7E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	6.8E-08	mg/kg/day	1.0E-04	mg/kg/day	7.E-04
				Selenium*	1.5E+01	mg/kg	1.8E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.4E-07	mg/kg/day	5.0E-03	mg/kg/day	3.E-05
				Silver*	1.9E+01	mg/kg	2.4E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.8E-07	mg/kg/day	5.0E-03	mg/kg/day	4.E-05
				Zinc	5.7E+04	mg/kg	7.1E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.5E-04	mg/kg/day	3.0E-01	mg/kg/day	2.E-03
				Fluoride	3.4E+01	mg/kg	4.3E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.3E-07	mg/kg/day	4.0E-02	mg/kg/day	8.E-06
			Exp. Route Total								3.E-07					2.E-02
			Dermal	Benzo(a)anthracene	7.6E-01	mg/kg	4.1E-10	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	3.E-10	3.2E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	9.5E-01	mg/kg	5.1E-10	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	4.E-09	4.0E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	1.2E+00	mg/kg	6.5E-10	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	5.E-10	5.0E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	3.7E-01	mg/kg	2.0E-10	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.6E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	9.0E-01	mg/kg	4.9E-10	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	4.E-11	3.8E-09	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	1.3E+00	mg/kg	7.0E-10	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	5.E-12	5.5E-09	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	3.5E-01	mg/kg	1.9E-10	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	1.E-09	1.5E-09	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	6.5E-01	mg/kg	3.5E-10	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	3.E-10	2.7E-09	mg/kg/day	NA	mg/kg/day	NA
				Aroclor 1254*	1.5E-01	mg/kg	8.7E-11	mg/kg/day	2.0E+00	$(mg/kg/day)^{-1}$	2.E-10	6.8E-10	mg/kg/day	2.0E-05	mg/kg/day	3.E-05
				Dieldrin*	8.8E-03	mg/kg	NA	mg/kg/day	1.6E+01	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	5.0E-05	mg/kg/day	NA
				Antimony*	4.1E+00	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	6.0E-05	mg/kg/day	NA
				Arsenic	2.3E+02	mg/kg	2.8E-08	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	4.E-08	2.2E-07	mg/kg/day	3.0E-04	mg/kg/day	7.E-04
				Barium	2.2E+03	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.4E-02	mg/kg/day	NA
				Cadmium	7.9E+02	mg/kg	3.3E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.6E-08	mg/kg/day	2.5E-05	mg/kg/day	1.E-03
				Cobalt	1.8E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-04	mg/kg/day	NA
				Copper	1.2E+03	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	4.0E-02	mg/kg/day	NA
				Cyanide *	3.2E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	2.0E-02	mg/kg/day	NA
				Iron	4.2E+04	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	7.0E-01	mg/kg/day	NA
				Lead	1.6E+03	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	9.8E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	5.6E-03	mg/kg/day	NA
				Mercury	6.9E+00	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.0E-04	mg/kg/day	NA
				Selenium*	1.5E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	5.0E-03	mg/kg/day	NA
				Silver*	1.9E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	2.0E-04	mg/kg/day	NA
				Zinc	5.7E+04	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-01	mg/kg/day	NA
				Fluoride	3.4E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	4.0E-02	mg/kg/day	NA
			Exp. Route Total								5.E-08					2.E-03
		Exposure Point Total									3.E-07					2.E-02
	Exposure Medium Total										3.E-07					2.E-02
Surface and Subsurface Soil Total											3.E-07					2.E-02

Table 7.14.CTE
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1B
Receptor: Utility Maintenance Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk			Intake/Exposure Concentration		RfD/RfC		
					Value	Units	Value	Units	Value	Units	Cancer Risk	Value	Units	Value	Units	Hazard Quotient
Sediment	Sediment	DePue Lake Surface and Subsurface Sediment Sediment Area 1B	Ingestion	Benzo(a)anthracene	3.9E-01	mg/kg	9.8E-11	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	7.E-11	7.6E-10	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	1.7E-01	mg/kg	4.3E-11	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	3.E-10	3.3E-10	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	3.0E-01	mg/kg	7.5E-11	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	6.E-11	5.9E-10	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	1.6E-01	mg/kg	4.0E-11	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	3.E-12	3.1E-10	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	5.6E-01	mg/kg	1.4E-10	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	1.E-12	1.1E-09	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	2.8E-02	mg/kg	7.0E-12	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	5.E-11	5.5E-11	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	4.8E-02	mg/kg	1.2E-11	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	9.E-14	9.4E-11	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	2.8E+00	mg/kg	7.0E-10	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.5E-09	mg/kg/day	2.0E-02	mg/kg/day	3.E-07
				Arsenic	6.3E+01	mg/kg	9.5E-09	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	1.E-08	7.4E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Barium	2.1E+03	mg/kg	5.4E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.2E-06	mg/kg/day	2.0E-01	mg/kg/day	2.E-05
				Cadmium	6.3E+02	mg/kg	1.6E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.2E-06	mg/kg/day	1.0E-03	mg/kg/day	1.E-03
				Cobalt	1.3E+02	mg/kg	3.2E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.5E-07	mg/kg/day	3.0E-04	mg/kg/day	8.E-04
				Copper	7.8E+03	mg/kg	2.0E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.5E-05	mg/kg/day	4.0E-02	mg/kg/day	4.E-04
				Iron	5.8E+04	mg/kg	1.5E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.1E-04	mg/kg/day	7.0E-01	mg/kg/day	2.E-04
				Lead	3.2E+03	mg/kg	8.0E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	6.2E-06	mg/kg/day	NA	mg/kg/day	NA
				Manganese	3.5E+03	mg/kg	8.8E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	6.9E-06	mg/kg/day	1.4E-01	mg/kg/day	5.E-05
				Mercury	2.2E+01	mg/kg	5.6E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.4E-08	mg/kg/day	1.0E-04	mg/kg/day	4.E-04
				Zinc	3.9E+04	mg/kg	9.9E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.7E-05	mg/kg/day	3.0E-01	mg/kg/day	3.E-04
			Exp. Route Total								1.E-08					4.E-03
			Dermal	Benzo(a)anthracene	3.9E-01	mg/kg	5.9E-11	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	4.E-11	4.6E-10	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	1.7E-01	mg/kg	2.6E-11	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	2.E-10	2.0E-10	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	3.0E-01	mg/kg	4.5E-11	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	3.E-11	3.5E-10	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	1.6E-01	mg/kg	2.4E-11	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	2.E-12	1.9E-10	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	5.6E-01	mg/kg	8.4E-11	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	6.E-13	6.6E-10	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	2.8E-02	mg/kg	4.2E-12	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	3.E-11	3.3E-11	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	4.8E-02	mg/kg	7.2E-12	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	5.E-12	5.6E-11	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	2.8E+00	mg/kg	4.2E-10	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.3E-09	mg/kg/day	2.0E-02	mg/kg/day	2.E-07
				Arsenic	6.3E+01	mg/kg	2.2E-09	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	3.E-09	1.7E-08	mg/kg/day	3.0E-04	mg/kg/day	6.E-05
				Barium	2.1E+03	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.4E-02	mg/kg/day	NA
				Cadmium	6.3E+02	mg/kg	7.3E-10	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.7E-09	mg/kg/day	2.5E-05	mg/kg/day	2.E-04
				Cobalt	1.3E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-04	mg/kg/day	NA
				Copper	7.8E+03	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	4.0E-02	mg/kg/day	NA
				Iron	5.8E+04	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	7.0E-01	mg/kg/day	NA
				Lead	3.2E+03	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	3.5E+03	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	5.6E-03	mg/kg/day	NA
				Mercury	2.2E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.0E-04	mg/kg/day	NA
				Zinc	3.9E+04	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-01	mg/kg/day	NA
			Exp. Route Total								4.E-09					3.E-04
		Exposure Point Total									2.E-08					4.E-03
	Exposure Medium Total										2.E-08					4.E-03
Sediment Soil Total											2.E-08					4.E-03

Table 7.14.CTE
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1B
Receptor: Utility Maintenance Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk			Intake/Exposure Concentration		RfD/RfC		
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	Hazard Quotient
Surface Water	Surface Water	DePue Lake Surface Water Eastern Portion of Lake	Ingestion													
				Cadmium	3.5E-03	mg/L	4.4E-10	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.4E-09	mg/kg/day	5.0E-04	mg/kg/day	7.E-06
				Lead	2.0E-02	mg/L	2.5E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.0E-08	mg/kg/day	NA	mg/kg/day	NA
				Manganese	3.8E-01	mg/L	4.7E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.7E-07	mg/kg/day	2.4E-02	mg/kg/day	2.E-05
				Ammonia	7.3E-01	mg/L	9.2E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.1E-07	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.6E+02	mg/L	2.0E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.5E-04	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	1.3E+01	mg/L	1.6E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.3E-05	mg/kg/day	1.6E+00	mg/kg/day	8.E-06
				Phosphorus	2.7E+00	mg/L	3.4E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.6E-06	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					3.E-05
			Dermal													
				Cadmium	3.5E-06	mg/cm^3	1.0E-10	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.9E-10	mg/kg/day	1.3E-05	mg/kg/day	6.E-05
				Lead	2.0E-05	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	3.8E-04	mg/cm^3	1.1E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	8.5E-08	mg/kg/day	9.6E-04	mg/kg/day	9.E-05
				Ammonia	7.3E-04	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.6E-01	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	1.3E-02	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.6E+00	mg/kg/day	NA
				Phosphorus	2.7E-03	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					1.E-04
		Exposure Point Total									0.E+00					2.E-04
	Exposure Medium Total										0.E+00					2.E-04
Surface Water Total											0.E+00					2.E-04
Groundwater Seeps	Sediment	Sediment Floodplain Area 1B	Ingestion													
				Arsenic	4.6E+01	mg/kg	1.0E-08	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	2.E-08	8.0E-08	mg/kg/day	3.0E-04	mg/kg/day	3.E-04
				Cadmium	1.4E+03	mg/kg	5.4E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.2E-06	mg/kg/day	1.0E-03	mg/kg/day	4.E-03
				Lead	3.2E+02	mg/kg	1.2E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	9.3E-07	mg/kg/day	NA	mg/kg/day	NA
				Manganese	8.8E+02	mg/kg	3.3E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.6E-06	mg/kg/day	1.4E-01	mg/kg/day	2.E-05
				Zinc	9.6E+04	mg/kg	3.6E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.8E-04	mg/kg/day	3.0E-01	mg/kg/day	9.E-04
			Exp. Route Total								2.E-08					5.E-03
			Dermal													
				Arsenic	4.6E+01	mg/kg	2.4E-09	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	4.E-09	1.8E-08	mg/kg/day	3.0E-04	mg/kg/day	6.E-05
				Cadmium	1.4E+03	mg/kg	2.5E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.9E-08	mg/kg/day	2.5E-05	mg/kg/day	8.E-04
				Lead	3.2E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	8.8E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	5.6E-03	mg/kg/day	NA
				Zinc	9.6E+04	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-01	mg/kg/day	NA
			Exp. Route Total								4.E-09					8.E-04
		Exposure Point Total									2.E-08					6.E-03
	Exposure Medium Total										2.E-08					6.E-03
Groundwater Seep Sediment Total											2.E-08					6.E-03
Groundwater Seeps	Surface Water	Surface Water Floodplain Area 1B	Ingestion													
				Cadmium	1.1E-02	mg/L	1.4E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.1E-08	mg/kg/day	5.0E-04	mg/kg/day	2.E-05
				Lead	1.5E-02	mg/L	1.8E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.4E-08	mg/kg/day	NA	mg/kg/day	NA
				Manganese	4.0E-01	mg/L	5.1E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.9E-07	mg/kg/day	2.4E-02	mg/kg/day	2.E-05
				Ammonia	6.8E-01	mg/L	8.5E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	6.6E-07	mg/kg/day	NA	mg/kg/day	NA
				Phosphorus	3.7E+00	mg/L	4.7E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.6E-06	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					2.E-05
			Dermal													
				Cadmium	1.1E-05	mg/cm^3	3.2E-10	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.5E-09	mg/kg/day	1.3E-05	mg/kg/day	2.E-04
				Lead	1.5E-05	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	4.0E-04	mg/cm^3	1.2E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	9.0E-08	mg/kg/day	9.6E-04	mg/kg/day	9.E-05
				Ammonia	6.8E-04	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Phosphorus	3.7E-03	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					3.E-04
		Exposure Point Total									0.E+00					3.E-04
	Exposure Medium Total										0.E+00					3.E-04
Groundwater Seep Surface Water Total											0.E+00					3.E-04
										Total of Receptor Risks Across All Media	4.E-07			Total of Receptor Hazards Across All Media		3.E-02

Notes:
NA = Not available
* Identified as a soil COPC only because constituent exceeded soil-to-groundwater criteria.

Table 7.15.RME
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain Area 2
Receptor: Wildlife Worker and Hunter
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk			Intake/Exposure Concentration		RfD/RfC		
					Value	Units	Value	Units	Value	Units	Cancer Risk	Value	Units	Value	Units	Hazard Quotient
Surface and Subsurface Soil	Surface and Subsurface Soil	Floodplain Surface and Subsurface Soil Floodplain Area 2	Ingestion													
				Benzo(a)anthracene	1.4E-01	mg/kg	7.3E-09	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	5.E-09	2.1E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	1.7E-01	mg/kg	8.9E-09	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	7.E-08	2.5E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	1.7E-01	mg/kg	8.9E-09	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	7.E-09	2.5E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	1.6E-01	mg/kg	8.4E-09	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	6.E-10	2.3E-08	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	1.8E-01	mg/kg	9.4E-09	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	7.E-11	2.6E-08	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	1.5E-01	mg/kg	7.9E-09	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	6.E-09	2.2E-08	mg/kg/day	NA	mg/kg/day	NA
				Arsenic	1.1E+01	mg/kg	3.4E-07	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	5.E-07	9.6E-07	mg/kg/day	3.0E-04	mg/kg/day	3.E-03
				Barium	6.0E+02	mg/kg	3.1E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	8.8E-05	mg/kg/day	2.0E-01	mg/kg/day	4.E-04
				Cadmium*	9.0E+00	mg/kg	4.7E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.3E-06	mg/kg/day	1.0E-03	mg/kg/day	1.E-03
				Chromium*	5.0E+01	mg/kg	2.6E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.3E-06	mg/kg/day	3.0E-03	mg/kg/day	2.E-03
				Cobalt*	9.9E+00	mg/kg	5.2E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.5E-06	mg/kg/day	3.0E-04	mg/kg/day	5.E-03
				Dieldrin*	2.5E-03	mg/kg	1.3E-10	mg/kg/day	1.6E+01	$(mg/kg/day)^{-1}$	2.E-09	3.7E-10	mg/kg/day	5.0E-05	mg/kg/day	7.E-06
				Iron	2.7E+04	mg/kg	1.4E-03	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.0E-03	mg/kg/day	7.0E-01	mg/kg/day	6.E-03
				Lead*	6.7E+01	mg/kg	3.5E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	9.8E-06	mg/kg/day	NA	mg/kg/day	NA
				Manganese	7.6E+02	mg/kg	4.0E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.1E-04	mg/kg/day	1.4E-01	mg/kg/day	8.E-04
			Exp. Route Total								6.E-07					2.E-02
			Dermal													
				Benzo(a)anthracene	1.4E-01	mg/kg	6.3E-09	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	5.E-09	1.8E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	1.7E-01	mg/kg	7.6E-09	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	6.E-08	2.1E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	1.7E-01	mg/kg	7.6E-09	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	6.E-09	2.1E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	1.6E-01	mg/kg	7.2E-09	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	5.E-10	2.0E-08	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	1.8E-01	mg/kg	8.1E-09	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	6.E-11	2.3E-08	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	1.5E-01	mg/kg	6.7E-09	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	5.E-09	1.9E-08	mg/kg/day	NA	mg/kg/day	NA
				Arsenic	1.1E+01	mg/kg	1.1E-07	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	2.E-07	3.2E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Barium	6.0E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.4E-02	mg/kg/day	NA
				Cadmium*	9.0E+00	mg/kg	3.1E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	8.7E-09	mg/kg/day	1.3E-05	mg/kg/day	7.E-04
				Chromium*	5.0E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	7.5E-05	mg/kg/day	NA
				Cobalt*	9.9E+00	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-04	mg/kg/day	NA
				Dieldrin*	2.5E-03	mg/kg	NA	mg/kg/day	1.6E+01	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	5.0E-05	mg/kg/day	NA
				Iron	2.7E+04	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	7.0E-01	mg/kg/day	NA
				Lead*	6.7E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	7.6E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	5.6E-03	mg/kg/day	NA
			Exp. Route Total								2.E-07					2.E-03
		Exposure Point Total									8.E-07					2.E-02
	Exposure Medium Total										8.E-07					2.E-02
Surface and Subsurface Soil Total											8.E-07					2.E-02
Sediment	Sediment	DePue Lake Surface and Subsurface Sediment Sediment Area 2	Ingestion													
				Benzo(a)anthracene	1.7E-01	mg/kg	9.1E-09	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	7.E-09	2.5E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	2.2E-01	mg/kg	1.2E-08	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	8.E-08	3.3E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	3.4E-01	mg/kg	1.8E-08	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	1.E-08	4.9E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	1.9E-01	mg/kg	1.0E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.9E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	2.6E-01	mg/kg	1.4E-08	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	1.E-09	3.9E-08	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	2.5E-01	mg/kg	1.3E-08	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	1.E-10	3.7E-08	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	5.2E-02	mg/kg	2.7E-09	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	2.E-08	7.6E-09	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	2.0E-01	mg/kg	1.1E-08	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	8.E-09	3.0E-08	mg/kg/day	NA	mg/kg/day	NA
				Arsenic	9.1E+00	mg/kg	2.9E-07	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	4.E-07	8.0E-07	mg/kg/day	3.0E-04	mg/kg/day	3.E-03
				Barium	3.4E+02	mg/kg	1.8E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.0E-05	mg/kg/day	2.0E-01	mg/kg/day	3.E-04
				Iron	2.7E+04	mg/kg	1.4E-03	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.0E-03	mg/kg/day	7.0E-01	mg/kg/day	6.E-03
				Manganese	6.8E+02	mg/kg	3.6E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.0E-04	mg/kg/day	1.4E-01	mg/kg/day	7.E-04
				Zinc	1.7E+03	mg/kg	9.0E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.5E-04	mg/kg/day	3.0E-01	mg/kg/day	8.E-04
			Exp. Route Total								6.E-07					9.E-03

Table 7.15.RME
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain Area 2
Receptor: Wildlife Worker and Hunter
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Sediment	Sediment	DePue Lake	Dermal													
		Surface and		Benzo(a)anthracene	1.7E-01	mg/kg	5.4E-09	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	4.E-09	1.5E-08	mg/kg/day	NA	mg/kg/day	NA
		Subsurface Sediment		Benzo(a)pyrene	2.2E-01	mg/kg	7.0E-09	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	5.E-08	1.9E-08	mg/kg/day	NA	mg/kg/day	NA
		Sediment Area 2		Benzo(b)fluoranthene	3.4E-01	mg/kg	1.1E-08	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	8.E-09	3.0E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	1.9E-01	mg/kg	6.1E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.7E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	2.6E-01	mg/kg	8.3E-09	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	6.E-10	2.3E-08	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	2.5E-01	mg/kg	7.8E-09	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	6.E-11	2.2E-08	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	5.2E-02	mg/kg	1.6E-09	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	1.E-08	4.5E-09	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	2.0E-01	mg/kg	6.4E-09	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	5.E-09	1.8E-08	mg/kg/day	NA	mg/kg/day	NA
				Arsenic	9.1E+00	mg/kg	6.6E-08	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	1.E-07	1.8E-07	mg/kg/day	3.0E-04	mg/kg/day	6.E-04
				Barium	3.4E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.4E-02	mg/kg/day	NA
				Iron	2.7E+04	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	7.0E-01	mg/kg/day	NA
				Manganese	6.8E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	5.6E-03	mg/kg/day	NA
				Zinc	1.7E+03	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-01	mg/kg/day	NA
			Exp. Route Total								2.E-07					6.E-04
		Exposure Point Total									7.E-07					1.E-02
	Exposure Medium Total										7.E-07					1.E-02
Surface and Subsurface Sediment Total											7.E-07					1.E-02
Surface Water	Surface Water	DePue Lake	Ingestion													
		Surface Water		Cadmium	3.5E-03	mg/L	3.7E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.0E-07	mg/kg/day	5.0E-04	mg/kg/day	2.E-04
		Lake-wide		Lead	1.7E-02	mg/L	1.8E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.0E-07	mg/kg/day	NA	mg/kg/day	NA
				Manganese	4.8E-01	mg/L	5.0E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.4E-05	mg/kg/day	2.4E-02	mg/kg/day	6.E-04
				Ammonia	2.2E+01	mg/L	2.3E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	6.5E-04	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.2E+02	mg/L	1.2E-03	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.4E-03	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	7.4E+00	mg/L	7.7E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.2E-04	mg/kg/day	1.6E+00	mg/kg/day	1.E-04
				Phosphorus	1.2E+00	mg/L	1.3E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.6E-05	mg/kg/day	NA	mg/kg/day	NA
				Sulfate	3.3E+02	mg/L	3.4E-03	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	9.5E-03	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					9.E-04
			Dermal													
				Cadmium	3.5E-06	mg/cm^3	8.4E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.4E-08	mg/kg/day	1.3E-05	mg/kg/day	2.E-03
				Lead	1.7E-05	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	4.8E-04	mg/cm^3	1.2E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.2E-06	mg/kg/day	9.6E-04	mg/kg/day	3.E-03
				Ammonia	2.2E-02	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.2E-01	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	7.4E-03	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.6E+00	mg/kg/day	NA
				Phosphorus	1.2E-03	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Sulfate	3.3E-01	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					5.E-03
		Exposure Point Total									0.E+00					6.E-03
	Exposure Medium Total										0.E+00					6.E-03
Groundwater Seep Surface Water Total											0.E+00					6.E-03
										Total of Receptor Risks Across All Media	2.E-06			Total of Receptor Hazards Across All Media		4.E-02

Notes:
NA = Not available
* Identified as a soil COPC only because constituent exceeded soil-to-groundwater criteria.

Table 7.15.CTE
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain Area 2
Receptor: Wildlife Worker and Hunter
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk			Intake/Exposure Concentration		RfD/RfC		
					Value	Units	Value	Units	Value	Units	Cancer Risk	Value	Units	Value	Units	Hazard Quotient
Surface and Subsurface Soil	Surface and Subsurface Soil	Floodplain Surface and Subsurface Soil Floodplain Area 2	Ingestion													
				Benzo(a)anthracene	1.4E-01	mg/kg	1.9E-09	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	1.E-09	1.5E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	1.7E-01	mg/kg	2.3E-09	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	2.E-08	1.8E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	1.7E-01	mg/kg	2.3E-09	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	2.E-09	1.8E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	1.6E-01	mg/kg	2.1E-09	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	2.E-10	1.7E-08	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	1.8E-01	mg/kg	2.4E-09	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	2.E-11	1.9E-08	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	1.5E-01	mg/kg	2.0E-09	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	1.E-09	1.6E-08	mg/kg/day	NA	mg/kg/day	NA
				Arsenic	1.1E+01	mg/kg	8.7E-08	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	1.E-07	6.8E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				Barium	6.0E+02	mg/kg	8.0E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	6.2E-05	mg/kg/day	2.0E-01	mg/kg/day	3.E-04
				Cadmium*	9.0E+00	mg/kg	1.2E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	9.3E-07	mg/kg/day	1.0E-03	mg/kg/day	9.E-04
				Chromium*	5.0E+01	mg/kg	6.6E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.2E-06	mg/kg/day	3.0E-03	mg/kg/day	2.E-03
				Cobalt*	9.9E+00	mg/kg	1.3E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.0E-06	mg/kg/day	3.0E-04	mg/kg/day	3.E-03
				Dieldrin*	2.5E-03	mg/kg	3.3E-11	mg/kg/day	1.6E+01	$(mg/kg/day)^{-1}$	5.E-10	2.6E-10	mg/kg/day	5.0E-05	mg/kg/day	5.E-06
				Iron	2.7E+04	mg/kg	3.6E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.8E-03	mg/kg/day	7.0E-01	mg/kg/day	4.E-03
				Lead*	6.7E+01	mg/kg	8.9E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	6.9E-06	mg/kg/day	NA	mg/kg/day	NA
				Manganese	7.6E+02	mg/kg	1.0E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.9E-05	mg/kg/day	1.4E-01	mg/kg/day	6.E-04
			Exp. Route Total								2.E-07					1.E-02
			Dermal													
				Benzo(a)anthracene	1.4E-01	mg/kg	8.0E-10	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	6.E-10	6.2E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	1.7E-01	mg/kg	9.7E-10	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	7.E-09	7.6E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	1.7E-01	mg/kg	9.7E-10	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	7.E-10	7.6E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	1.6E-01	mg/kg	9.2E-10	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	7.E-11	7.1E-09	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	1.8E-01	mg/kg	1.0E-09	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	8.E-12	8.0E-09	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	1.5E-01	mg/kg	8.6E-10	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	6.E-10	6.7E-09	mg/kg/day	NA	mg/kg/day	NA
				Arsenic	1.1E+01	mg/kg	1.4E-08	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	2.E-08	4.9E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				Barium	6.0E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.4E-02	mg/kg/day	NA
				Cadmium*	9.0E+00	mg/kg	4.0E-10	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.1E-09	mg/kg/day	1.3E-05	mg/kg/day	2.E-04
				Chromium*	5.0E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	7.5E-05	mg/kg/day	NA
				Cobalt*	9.9E+00	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-04	mg/kg/day	NA
				Dieldrin*	2.5E-03	mg/kg	NA	mg/kg/day	1.6E+01	$(mg/kg/day)^{-2}$	NA	NA	mg/kg/day	5.0E-05	mg/kg/day	NA
				Iron	2.7E+04	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	7.0E-01	mg/kg/day	NA
				Lead*	6.7E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	7.6E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	5.6E-03	mg/kg/day	NA
			Exp. Route Total								3.E-08					2.E-03
		Exposure Point Total									2.E-07					2.E-02
	Exposure Medium Total										2.E-07					2.E-02
Surface and Subsurface Soil Total											2.E-07					2.E-02
Sediment	Sediment	DePue Lake Surface and Subsurface Sediment Sediment Area 2	Ingestion													
				Benzo(a)anthracene	1.7E-01	mg/kg	1.2E-09	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	8.E-10	9.0E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	2.2E-01	mg/kg	1.5E-09	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	1.E-08	1.2E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	3.4E-01	mg/kg	2.2E-09	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	2.E-09	1.7E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	1.9E-01	mg/kg	1.3E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.0E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	2.6E-01	mg/kg	1.8E-09	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	1.E-10	1.4E-08	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	2.5E-01	mg/kg	1.7E-09	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	1.E-11	1.3E-08	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	5.2E-02	mg/kg	3.4E-10	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	3.E-09	2.7E-09	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	2.0E-01	mg/kg	1.4E-09	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	1.E-09	1.1E-08	mg/kg/day	NA	mg/kg/day	NA
				Arsenic	9.1E+00	mg/kg	3.6E-08	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	5.E-08	2.8E-07	mg/kg/day	3.0E-04	mg/kg/day	9.E-04
				Barium	3.4E+02	mg/kg	2.3E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.8E-05	mg/kg/day	2.0E-01	mg/kg/day	9.E-05
				Iron	2.7E+04	mg/kg	1.8E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.4E-03	mg/kg/day	7.0E-01	mg/kg/day	2.E-03
				Manganese	6.8E+02	mg/kg	4.5E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.5E-05	mg/kg/day	1.4E-01	mg/kg/day	3.E-04
				Zinc	1.7E+03	mg/kg	1.1E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	8.9E-05	mg/kg/day	3.0E-01	mg/kg/day	3.E-04
			Exp. Route Total								7.E-08					3.E-03

Table 7.15.CTE
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain Area 2
Receptor: Wildlife Worker and Hunter
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk			Intake/Exposure Concentration		RfD/RfC		
					Value	Units	Value	Units	Value	Units	Cancer Risk	Value	Units	Value	Units	Hazard Quotient
Sediment	Sediment	DePue Lake Surface and Subsurface Sediment Sediment Area 2	Dermal	Benzo(a)anthracene	1.7E-01	mg/kg	6.9E-10	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	5.E-10	5.4E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	2.2E-01	mg/kg	8.9E-10	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	6.E-09	6.9E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	3.4E-01	mg/kg	1.3E-09	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	1.E-09	1.0E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	1.9E-01	mg/kg	7.8E-10	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	6.0E-09	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	2.6E-01	mg/kg	1.1E-09	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	8.E-11	8.2E-09	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	2.5E-01	mg/kg	9.9E-10	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	7.E-12	7.7E-09	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	5.2E-02	mg/kg	2.1E-10	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	2.E-09	1.6E-09	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	2.0E-01	mg/kg	8.1E-10	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	6.E-10	6.3E-09	mg/kg/day	NA	mg/kg/day	NA
				Arsenic	9.1E+00	mg/kg	8.3E-09	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	1.E-08	6.5E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				Barium	3.4E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.4E-02	mg/kg/day	NA
				Iron	2.7E+04	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	7.0E-01	mg/kg/day	NA
				Manganese	6.8E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	5.6E-03	mg/kg/day	NA
				Zinc	1.7E+03	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-01	mg/kg/day	NA
			Exp. Route Total								2.E-08					2.E-04
		Exposure Point Total									9.E-08					4.E-03
	Exposure Medium Total										9.E-08					4.E-03
Surface and Subsurface Sediment Total											9.E-08					4.E-03
Surface Water	Surface Water	DePue Lake Surface Water Lake-wide	Ingestion	Cadmium	3.5E-03	mg/L	9.3E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.2E-08	mg/kg/day	5.0E-04	mg/kg/day	1.E-04
				Lead	1.7E-02	mg/L	4.5E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.5E-07	mg/kg/day	NA	mg/kg/day	NA
				Manganese	4.8E-01	mg/L	1.3E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	9.9E-06	mg/kg/day	2.4E-02	mg/kg/day	4.E-04
				Ammonia	2.2E+01	mg/L	6.0E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.6E-04	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.2E+02	mg/L	3.1E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.4E-03	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	7.4E+00	mg/L	2.0E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.5E-04	mg/kg/day	1.6E+00	mg/kg/day	1.E-04
				Phosphorus	1.2E+00	mg/L	3.3E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.6E-05	mg/kg/day	NA	mg/kg/day	NA
				Sulfate	3.3E+02	mg/L	8.7E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	6.7E-03	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					7.E-04
			Dermal	Cadmium	3.5E-06	mg/cm^3	2.1E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.7E-08	mg/kg/day	1.3E-05	mg/kg/day	1.E-03
				Lead	1.7E-05	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	4.8E-04	mg/cm^3	2.9E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.3E-06	mg/kg/day	9.6E-04	mg/kg/day	2.E-03
				Ammonia	2.2E-02	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.2E-01	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	7.4E-03	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.6E+00	mg/kg/day	NA
				Phosphorus	1.2E-03	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Sulfate	3.3E-01	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					4.E-03
		Exposure Point Total									0.E+00					4.E-03
	Exposure Medium Total										0.E+00					4.E-03
Groundwater Seep Surface Water Total											0.E+00					4.E-03
										Total of Receptor Risks Across All Media	3.E-07			Total of Receptor Hazards Across All Media		2.E-02

Notes:
NA = Not available
* Identified as a soil COPC only because constituent exceeded soil-to-groundwater criteria.

Table 7.16.RME
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain Area 2/3
Receptor: Farmer
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface and Subsurface Soil	Surface and Subsurface Soil	Floodplain Surface and Subsurface Soil Floodplain Area 2/3	Ingestion	Chromium*	7.0E+01	mg/kg	5.5E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.5E-05	mg/kg/day	3.0E-03	mg/kg/day	5.E-03
			Exp. Route Total								0.E+00					5.E-03
			Dermal	Chromium*	7.0E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	7.5E-05	mg/kg/day	NA
			Exp. Route Total								0.E+00					0.E+00
			Inhalation	Chromium*	7.0E+01	mg/kg	1.0E-08	mg/m^3	8.4E+01	$(mg/m^3)^{-1}$	9.E-07	2.9E-08	mg/m^3	1.0E-04	mg/m^3	3.E-04
			Exp. Route Total								9.E-07					3.E-04
		Exposure Point Total									9.E-07					5.E-03
	Exposure Medium Total										9.E-07					5.E-03
Soil Total											9.E-07					5.E-03
											Total of Receptor Risks Across All Media 9.E-07					Total of Receptor Hazards Across All Media 5.E-03

Notes:
NA = Not available
* Identified as a soil COPC only because constituent exceeded soil-to-groundwater criteria.

Table 7.16.CTE
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain Area 2/3
Receptor: Farmer
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface and Subsurface Soil	Surface and Subsurface Soil	Floodplain Surface and Subsurface Soil Floodplain Area 2/3	Ingestion	Chromium*	7.0E+01	mg/kg	2.5E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.9E-06	mg/kg/day	3.0E-03	mg/kg/day	6.E-04
			Exp. Route Total								0.E+00					6.E-04
			Dermal	Chromium*	7.0E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	7.5E-05	mg/kg/day	NA
			Exp. Route Total								0.E+00					0.E+00
			Inhalation	Chromium*	7.0E+01	mg/kg	4.7E-10	mg/m^3	8.4E+01	$(mg/m^3)^{-1}$	4.E-08	3.6E-09	mg/m^3	1.0E-04	mg/m^3	4.E-05
			Exp. Route Total								4.E-08					4.E-05
		Exposure Point Total									4.E-08					7.E-04
	Exposure Medium Total										4.E-08					7.E-04
Soil Total											4.E-08					7.E-04
											Total of Receptor Risks Across All Media 4.E-08					Total of Receptor Hazards Across All Media 7.E-04

Notes:
NA = Not available
* Identified as a soil COPC only because constituent exceeded soil-to-groundwater criteria.

Table 7.17.RME
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Lake-Wide
Receptor: Lake Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Sediment	Sediment	DePue Lake Surface Sediment Lake-wide (Swimming Scenario)	Ingestion	Benzo(a)anthracene	1.9E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	2.E-08	4.2E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	1.6E+00	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	2.E-06	3.6E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	2.4E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	3.E-08	5.3E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	2.4E-01	mg/kg	1.8E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.3E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	1.5E+00	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	2.E-08	3.2E-07	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	1.7E+00	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	2.E-09	3.8E-07	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	2.7E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	4.E-07	6.0E-08	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	8.6E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	1.E-07	1.9E-07	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	1.6E+00	mg/kg	1.2E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.6E-07	mg/kg/day	2.0E-02	mg/kg/day	2.E-05
				Gamma-BHC (Lindane)	3.4E+01	mg/kg	2.6E-06	mg/kg/day	1.1E+00	$(mg/kg/day)^{-1}$	3.E-06	7.5E-06	mg/kg/day	3.0E-04	mg/kg/day	2.E-02
				Arsenic	1.8E+01	mg/kg	8.3E-07	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	1.E-06	2.4E-06	mg/kg/day	3.0E-04	mg/kg/day	8.E-03
				Barium	4.6E+02	mg/kg	3.5E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.0E-04	mg/kg/day	2.0E-01	mg/kg/day	5.E-04
				Cadmium	1.0E+02	mg/kg	7.5E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.2E-05	mg/kg/day	1.0E-03	mg/kg/day	2.E-02
				Cobalt	2.0E+01	mg/kg	1.5E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.4E-06	mg/kg/day	3.0E-04	mg/kg/day	1.E-02
				Copper	7.2E+02	mg/kg	5.4E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.6E-04	mg/kg/day	4.0E-02	mg/kg/day	4.E-03
				Iron	2.7E+04	mg/kg	2.1E-03	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	6.0E-03	mg/kg/day	7.0E-01	mg/kg/day	9.E-03
				Lead	3.2E+02	mg/kg	2.4E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.0E-05	mg/kg/day	NA	mg/kg/day	NA
				Manganese	8.3E+02	mg/kg	6.2E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.8E-04	mg/kg/day	1.4E-01	mg/kg/day	1.E-03
				Mercury	2.7E+00	mg/kg	2.0E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.9E-07	mg/kg/day	1.0E-04	mg/kg/day	6.E-03
				Zinc	7.3E+03	mg/kg	5.4E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.6E-03	mg/kg/day	3.0E-01	mg/kg/day	5.E-03
			Exp. Route Total								7.E-06					9.E-02
			Dermal													
				Benzo(a)anthracene	1.9E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	1.E-07	2.0E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	1.6E+00	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	1.E-05	1.7E-06	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	2.4E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	1.E-07	2.5E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	2.4E-01	mg/kg	8.6E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.5E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	1.5E+00	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	9.E-08	1.5E-06	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	1.7E+00	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	1.E-08	1.8E-06	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	2.7E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	2.E-06	2.8E-07	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	8.6E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	5.E-07	8.9E-07	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	1.6E+00	mg/kg	5.8E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.7E-06	mg/kg/day	2.0E-02	mg/kg/day	8.E-05
				Gamma-BHC (Lindane)	3.4E+01	mg/kg	3.7E-06	mg/kg/day	1.1E+00	$(mg/kg/day)^{-1}$	4.E-06	1.1E-05	mg/kg/day	3.0E-04	mg/kg/day	4.E-02
				Arsenic	1.8E+01	mg/kg	1.5E-06	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	2.E-06	4.4E-06	mg/kg/day	3.0E-04	mg/kg/day	1.E-02
				Barium	4.6E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.4E-02	mg/kg/day	NA
				Cadmium	1.0E+02	mg/kg	2.7E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.9E-07	mg/kg/day	2.5E-05	mg/kg/day	3.E-02
				Cobalt	2.0E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-04	mg/kg/day	NA
				Copper	7.2E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	4.0E-02	mg/kg/day	NA
				Iron	2.7E+04	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	7.0E-01	mg/kg/day	NA
				Lead	3.2E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	8.3E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	5.6E-03	mg/kg/day	NA
				Mercury	2.7E+00	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.0E-04	mg/kg/day	NA
				Zinc	7.3E+03	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-01	mg/kg/day	NA
			Exp. Route Total								2.E-05					8.E-02
		Exposure Point Total									3.E-05					2.E-01
	Exposure Medium Total										3.E-05					2.E-01
Sediment Soil Total											3.E-05					2.E-01

Table 7.17.RME
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Lake-Wide
Receptor: Lake Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface Water	Surface Water	DePue Lake	Ingestion													
		Surface Water		Cadmium	3.5E-03	mg/L	2.6E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.6E-08	mg/kg/day	5.0E-04	mg/kg/day	2.E-04
		Lake-wide		Lead	1.7E-02	mg/L	1.3E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.7E-07	mg/kg/day	NA	mg/kg/day	NA
		(Swimming Scenario)		Manganese	4.8E-01	mg/L	3.6E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.0E-05	mg/kg/day	2.4E-02	mg/kg/day	4.E-04
				Ammonia	2.2E+01	mg/L	1.7E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.9E-04	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.2E+02	mg/L	8.8E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.6E-03	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	7.4E+00	mg/L	5.6E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.6E-04	mg/kg/day	1.6E+00	mg/kg/day	1.E-04
				Phosphorus	1.2E+00	mg/L	9.2E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.7E-05	mg/kg/day	NA	mg/kg/day	NA
				Sulfate	3.3E+02	mg/L	2.4E-03	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.1E-03	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					7.E-04
			Dermal													
				Cadmium	3.5E-06	mg/cm^3	4.7E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.4E-07	mg/kg/day	1.3E-05	mg/kg/day	1.E-02
				Lead	1.7E-05	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	4.8E-04	mg/cm^3	6.5E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.9E-05	mg/kg/day	9.6E-04	mg/kg/day	2.E-02
				Ammonia	2.2E-02	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.2E-01	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	7.4E-03	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.6E+00	mg/kg/day	NA
				Phosphorus	1.2E-03	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Sulfate	3.3E-01	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					3.E-02
		Exposure Point Total									0.E+00					3.E-02
	Exposure Medium Total										0.E+00					3.E-02
Surface Water Total											0.E+00					3.E-02
Total of Receptor Risks Across All Media											3.E-05					2.E-01

NA = Not available
-- = Consituent is a mutagen, intakes/risk calculations are detailed in Appendix F.

Table 7.17.CTE
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Lake-Wide
Receptor: Lake Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Sediment	Sediment	DePue Lake	Ingestion													
		Surface Sediment		Benzo(a)anthracene	1.9E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	3.E-09	1.0E-08	mg/kg/day	NA	mg/kg/day	NA
		Lake-wide		Benzo(a)pyrene	1.6E+00	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	3.E-07	9.0E-08	mg/kg/day	NA	mg/kg/day	NA
		(Swimming Scenario)		Benzo(b)fluoranthene	2.4E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	4.E-09	1.3E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	2.4E-01	mg/kg	1.7E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.3E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	1.5E+00	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	3.E-09	8.1E-08	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	1.7E+00	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	3.E-10	9.5E-08	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	2.7E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	5.E-08	1.5E-08	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	8.6E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	2.E-08	4.7E-08	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	1.6E+00	mg/kg	1.2E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	9.0E-08	mg/kg/day	2.0E-02	mg/kg/day	4.E-06
				Gamma-BHC (Lindane)	3.4E+01	mg/kg	2.4E-07	mg/kg/day	1.1E+00	$(mg/kg/day)^{-1}$	3.E-07	1.9E-06	mg/kg/day	3.0E-04	mg/kg/day	6.E-03
				Arsenic	1.8E+01	mg/kg	7.8E-08	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	1.E-07	6.1E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				Barium	4.6E+02	mg/kg	3.3E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.5E-05	mg/kg/day	2.0E-01	mg/kg/day	1.E-04
				Cadmium	1.0E+02	mg/kg	7.0E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.5E-06	mg/kg/day	1.0E-03	mg/kg/day	5.E-03
				Cobalt	2.0E+01	mg/kg	1.4E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.1E-06	mg/kg/day	3.0E-04	mg/kg/day	4.E-03
				Copper	7.2E+02	mg/kg	5.1E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.0E-05	mg/kg/day	4.0E-02	mg/kg/day	1.E-03
				Iron	2.7E+04	mg/kg	1.9E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.5E-03	mg/kg/day	7.0E-01	mg/kg/day	2.E-03
				Lead	3.2E+02	mg/kg	2.2E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.7E-05	mg/kg/day	NA	mg/kg/day	NA
				Manganese	8.3E+02	mg/kg	5.8E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.5E-05	mg/kg/day	1.4E-01	mg/kg/day	3.E-04
				Mercury	2.7E+00	mg/kg	1.9E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.5E-07	mg/kg/day	1.0E-04	mg/kg/day	1.E-03
				Zinc	7.3E+03	mg/kg	5.1E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.0E-04	mg/kg/day	3.0E-01	mg/kg/day	1.E-03
			Exp. Route Total								7.E-07					2.E-02
			Dermal													
				Benzo(a)anthracene	1.9E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	6.E-09	2.0E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	1.6E+00	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	5.E-07	1.7E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	2.4E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	8.E-09	2.5E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	2.4E-01	mg/kg	3.2E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.5E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	1.5E+00	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	5.E-09	1.5E-07	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	1.7E+00	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	6.E-10	1.8E-07	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	2.7E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	9.E-08	2.8E-08	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	8.6E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	3.E-08	8.9E-08	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	1.6E+00	mg/kg	2.2E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.7E-07	mg/kg/day	2.0E-02	mg/kg/day	8.E-06
				Gamma-BHC (Lindane)	3.4E+01	mg/kg	1.4E-07	mg/kg/day	1.1E+00	$(mg/kg/day)^{-1}$	2.E-07	1.1E-06	mg/kg/day	3.0E-04	mg/kg/day	4.E-03
				Arsenic	1.8E+01	mg/kg	5.6E-08	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	8.E-08	4.4E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				Barium	4.6E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.4E-02	mg/kg/day	NA
				Cadmium	1.0E+02	mg/kg	1.0E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.9E-08	mg/kg/day	2.5E-05	mg/kg/day	3.E-03
				Cobalt	2.0E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-04	mg/kg/day	NA
				Copper	7.2E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	4.0E-02	mg/kg/day	NA
				Iron	2.7E+04	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	7.0E-01	mg/kg/day	NA
				Lead	3.2E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	8.3E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	5.6E-03	mg/kg/day	NA
				Mercury	2.7E+00	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.0E-04	mg/kg/day	NA
				Zinc	7.3E+03	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-01	mg/kg/day	NA
			Exp. Route Total								9.E-07					8.E-03
		Exposure Point Total									2.E-06					3.E-02
	Exposure Medium Total										2.E-06					3.E-02
Sediment Soil Total											2.E-06					3.E-02

Table 7.17.CTE
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Lake-Wide
Receptor: Lake Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface Water	Surface Water	DePue Lake	Ingestion													
		Surface Water		Cadmium	3.5E-03	mg/L	4.9E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.8E-08	mg/kg/day	5.0E-04	mg/kg/day	8.E-05
		Lake-wide		Lead	1.7E-02	mg/L	2.4E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.9E-07	mg/kg/day	NA	mg/kg/day	NA
		(Swimming Scenario)		Manganese	4.8E-01	mg/L	6.7E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.2E-06	mg/kg/day	2.4E-02	mg/kg/day	2.E-04
				Ammonia	2.2E+01	mg/L	3.1E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.4E-04	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.2E+02	mg/L	1.6E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.3E-03	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	7.4E+00	mg/L	1.0E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	8.1E-05	mg/kg/day	1.6E+00	mg/kg/day	5.E-05
				Phosphorus	1.2E+00	mg/L	1.7E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.3E-05	mg/kg/day	NA	mg/kg/day	NA
				Sulfate	3.3E+02	mg/L	4.6E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.6E-03	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					3.E-04
			Dermal													
				Cadmium	3.5E-06	mg/cm^3	8.9E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	6.9E-08	mg/kg/day	1.3E-05	mg/kg/day	5.E-03
				Lead	1.7E-05	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	4.8E-04	mg/cm^3	1.2E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	9.4E-06	mg/kg/day	9.6E-04	mg/kg/day	1.E-02
				Ammonia	2.2E-02	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.2E-01	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	7.4E-03	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.6E+00	mg/kg/day	NA
				Phosphorus	1.2E-03	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Sulfate	3.3E-01	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					2.E-02
		Exposure Point Total									0.E+00					2.E-02
	Exposure Medium Total										0.E+00					2.E-02
Surface Water Total											0.E+00					2.E-02
`											Total of Receptor Risks Across All Media	2.E-06				5.E-02

Note:
-- = Consituent is a mutagen, intakes/risk calculations are detailed in Appendix F.

Table 7.18.RME
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Lake-Wide
Receptor: Lake Recreational User
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Sediment	Sediment	DePue Lake	Ingestion													
		Surface Sediment		Benzo(a)anthracene	1.9E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	2.E-07	3.9E-07	mg/kg/day	NA	mg/kg/day	NA
		Lake-wide		Benzo(a)pyrene	1.6E+00	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	2.E-05	3.4E-06	mg/kg/day	NA	mg/kg/day	NA
		(Swimming Scenario)		Benzo(b)fluoranthene	2.4E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	2.E-07	5.0E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	2.4E-01	mg/kg	4.3E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.0E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	1.5E+00	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	1.E-07	3.0E-06	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	1.7E+00	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	2.E-08	3.5E-06	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	2.7E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	3.E-06	5.6E-07	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	8.6E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	8.E-07	1.8E-06	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	1.6E+00	mg/kg	2.9E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.4E-06	mg/kg/day	2.0E-02	mg/kg/day	2.E-04
				Gamma-BHC (Lindane)	3.4E+01	mg/kg	6.0E-06	mg/kg/day	1.1E+00	$(mg/kg/day)^{-1}$	7.E-06	7.0E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				Arsenic	1.8E+01	mg/kg	1.9E-06	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	3.E-06	2.3E-05	mg/kg/day	3.0E-04	mg/kg/day	8.E-02
				Barium	4.6E+02	mg/kg	8.1E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	9.5E-04	mg/kg/day	2.0E-01	mg/kg/day	5.E-03
				Cadmium	1.0E+02	mg/kg	1.8E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.0E-04	mg/kg/day	1.0E-03	mg/kg/day	2.E-01
				Cobalt	2.0E+01	mg/kg	3.5E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.1E-05	mg/kg/day	3.0E-04	mg/kg/day	1.E-01
				Copper	7.2E+02	mg/kg	1.3E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.5E-03	mg/kg/day	4.0E-02	mg/kg/day	4.E-02
				Iron	2.7E+04	mg/kg	4.8E-03	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.6E-02	mg/kg/day	7.0E-01	mg/kg/day	8.E-02
				Lead	3.2E+02	mg/kg	5.6E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	6.5E-04	mg/kg/day	NA	mg/kg/day	NA
				Manganese	8.3E+02	mg/kg	1.5E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.7E-03	mg/kg/day	1.4E-01	mg/kg/day	1.E-02
				Mercury	2.7E+00	mg/kg	4.7E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.5E-06	mg/kg/day	1.0E-04	mg/kg/day	5.E-02
				Zinc	7.3E+03	mg/kg	1.3E-03	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.5E-02	mg/kg/day	3.0E-01	mg/kg/day	5.E-02
			Exp. Route Total								3.E-05					9.E-01
			Dermal													
				Benzo(a)anthracene	1.9E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	2.E-07	3.4E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	1.6E+00	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	1.E-05	2.9E-06	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	2.4E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	2.E-07	4.3E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	2.4E-01	mg/kg	3.7E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.3E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	1.5E+00	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	1.E-07	2.6E-06	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	1.7E+00	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	1.E-08	3.0E-06	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	2.7E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	2.E-06	4.8E-07	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	8.6E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	7.E-07	1.5E-06	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	1.6E+00	mg/kg	2.5E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.9E-06	mg/kg/day	2.0E-02	mg/kg/day	1.E-04
				Gamma-BHC (Lindane)	3.4E+01	mg/kg	1.6E-06	mg/kg/day	1.1E+00	$(mg/kg/day)^{-1}$	2.E-06	1.8E-05	mg/kg/day	3.0E-04	mg/kg/day	6.E-02
				Arsenic	1.8E+01	mg/kg	6.4E-07	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	1.E-06	7.5E-06	mg/kg/day	3.0E-04	mg/kg/day	2.E-02
				Barium	4.6E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.4E-02	mg/kg/day	NA
				Cadmium	1.0E+02	mg/kg	1.2E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.4E-06	mg/kg/day	2.5E-05	mg/kg/day	5.E-02
				Cobalt	2.0E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-04	mg/kg/day	NA
				Copper	7.2E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	4.0E-02	mg/kg/day	NA
				Iron	2.7E+04	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	7.0E-01	mg/kg/day	NA
				Lead	3.2E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	8.3E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	5.6E-03	mg/kg/day	NA
				Mercury	2.7E+00	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.0E-04	mg/kg/day	NA
				Zinc	7.3E+03	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-01	mg/kg/day	NA
			Exp. Route Total								2.E-05					1.E-01
		Exposure Point Total									5.E-05					1.E+00
	Exposure Medium Total										5.E-05					1.E+00
Sediment Soil Total											5.E-05					1.E+00

Table 7.18.RME
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Lake-Wide
Receptor: Lake Recreational User
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface Water	Surface Water	DePue Lake	Ingestion													
		Surface Water		Cadmium	3.5E-03	mg/L	3.1E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.6E-07	mg/kg/day	5.0E-04	mg/kg/day	7.E-04
		Lake-wide		Lead	1.7E-02	mg/L	1.5E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.7E-06	mg/kg/day	NA	mg/kg/day	NA
		(Swimming Scenario)		Manganese	4.8E-01	mg/L	4.2E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.9E-05	mg/kg/day	2.4E-02	mg/kg/day	2.E-03
				Ammonia	2.2E+01	mg/L	2.0E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.3E-03	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.2E+02	mg/L	1.0E-03	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.2E-02	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	7.4E+00	mg/L	6.5E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.6E-04	mg/kg/day	1.6E+00	mg/kg/day	5.E-04
				Phosphorus	1.2E+00	mg/L	1.1E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.3E-04	mg/kg/day	NA	mg/kg/day	NA
				Sulfate	3.3E+02	mg/L	2.8E-03	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.3E-02	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					3.E-03
			Dermal													
				Cadmium	3.5E-06	mg/cm^3	2.0E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.4E-07	mg/kg/day	1.3E-05	mg/kg/day	2.E-02
				Lead	1.7E-05	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	4.8E-04	mg/cm^3	2.8E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.2E-05	mg/kg/day	9.6E-04	mg/kg/day	3.E-02
				Ammonia	2.2E-02	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.2E-01	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	7.4E-03	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.6E+00	mg/kg/day	NA
				Phosphorus	1.2E-03	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Sulfate	3.3E-01	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					5.E-02
		Exposure Point Total									0.E+00					5.E-02
	Exposure Medium Total										0.E+00					5.E-02
Surface Water Total											0.E+00					5.E-02
Total of Receptor Risks Across All Media											5.E-05	Total of Receptor Hazards Across All Media				1.E+00

Note:
-- = Consituent is a mutagen, intakes/risk calculations are detailed in Appendix F.

Table 7.18.CTE
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Lake-Wide
Receptor: Lake Recreational User
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Sediment	Sediment	DePue Lake Surface Sediment Lake-wide (Swimming Scenario)	Ingestion	Benzo(a)anthracene	1.9E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	4.E-08	9.8E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	1.6E+00	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	4.E-06	8.4E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	2.4E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	6.E-08	1.2E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	2.4E-01	mg/kg	1.1E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.2E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	1.5E+00	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	3.E-08	7.6E-07	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	1.7E+00	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	4.E-09	8.8E-07	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	2.7E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	6.E-07	1.4E-07	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	8.6E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	2.E-07	4.4E-07	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	1.6E+00	mg/kg	7.2E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	8.4E-07	mg/kg/day	2.0E-02	mg/kg/day	4.E-05
				Gamma-BHC (Lindane)	3.4E+01	mg/kg	1.5E-06	mg/kg/day	1.1E+00	$(mg/kg/day)^{-1}$	2.E-06	1.7E-05	mg/kg/day	3.0E-04	mg/kg/day	6.E-02
				Arsenic	1.8E+01	mg/kg	4.9E-07	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	7.E-07	5.7E-06	mg/kg/day	3.0E-04	mg/kg/day	2.E-02
				Barium	4.6E+02	mg/kg	2.0E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.4E-04	mg/kg/day	2.0E-01	mg/kg/day	1.E-03
				Cadmium	1.0E+02	mg/kg	4.4E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.1E-05	mg/kg/day	1.0E-03	mg/kg/day	5.E-02
				Cobalt	2.0E+01	mg/kg	8.7E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.0E-05	mg/kg/day	3.0E-04	mg/kg/day	3.E-02
				Copper	7.2E+02	mg/kg	3.2E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.7E-04	mg/kg/day	4.0E-02	mg/kg/day	9.E-03
				Iron	2.7E+04	mg/kg	1.2E-03	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.4E-02	mg/kg/day	7.0E-01	mg/kg/day	2.E-02
				Lead	3.2E+02	mg/kg	1.4E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.6E-04	mg/kg/day	NA	mg/kg/day	NA
				Manganese	8.3E+02	mg/kg	3.6E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.2E-04	mg/kg/day	1.4E-01	mg/kg/day	3.E-03
				Mercury	2.7E+00	mg/kg	1.2E-07	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.4E-06	mg/kg/day	1.0E-04	mg/kg/day	1.E-02
				Zinc	7.3E+03	mg/kg	3.2E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.7E-03	mg/kg/day	3.0E-01	mg/kg/day	1.E-02
			Exp. Route Total								7.E-06					2.E-01
			Dermal													
				Benzo(a)anthracene	1.9E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	2.E-08	3.4E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(a)pyrene	1.6E+00	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	1.E-06	2.9E-07	mg/kg/day	NA	mg/kg/day	NA
				Benzo(b)fluoranthene	2.4E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	2.E-08	4.3E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(g,h,i)perylene	2.4E-01	mg/kg	3.7E-09	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.3E-08	mg/kg/day	NA	mg/kg/day	NA
				Benzo(k)fluoranthene	1.5E+00	mg/kg	--	mg/kg/day	7.3E-02	$(mg/kg/day)^{-1}$	1.E-08	2.6E-07	mg/kg/day	NA	mg/kg/day	NA
				Chrysene	1.7E+00	mg/kg	--	mg/kg/day	7.3E-03	$(mg/kg/day)^{-1}$	1.E-09	3.0E-07	mg/kg/day	NA	mg/kg/day	NA
				Dibenz(a,h)anthracene	2.7E-01	mg/kg	--	mg/kg/day	7.3E+00	$(mg/kg/day)^{-1}$	2.E-07	4.8E-08	mg/kg/day	NA	mg/kg/day	NA
				Indeno(1,2,3-cd)pyrene	8.6E-01	mg/kg	--	mg/kg/day	7.3E-01	$(mg/kg/day)^{-1}$	7.E-08	1.5E-07	mg/kg/day	NA	mg/kg/day	NA
				Naphthalene	1.6E+00	mg/kg	2.5E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.9E-07	mg/kg/day	2.0E-02	mg/kg/day	1.E-05
				Gamma-BHC (Lindane)	3.4E+01	mg/kg	1.6E-07	mg/kg/day	1.1E+00	$(mg/kg/day)^{-1}$	2.E-07	1.8E-06	mg/kg/day	3.0E-04	mg/kg/day	6.E-03
				Arsenic	1.8E+01	mg/kg	6.4E-08	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	1.E-07	7.5E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				Barium	4.6E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.4E-02	mg/kg/day	NA
				Cadmium	1.0E+02	mg/kg	1.2E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.4E-07	mg/kg/day	2.5E-05	mg/kg/day	5.E-03
				Cobalt	2.0E+01	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-04	mg/kg/day	NA
				Copper	7.2E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	4.0E-02	mg/kg/day	NA
				Iron	2.7E+04	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	7.0E-01	mg/kg/day	NA
				Lead	3.2E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	8.3E+02	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	5.6E-03	mg/kg/day	NA
				Mercury	2.7E+00	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.0E-04	mg/kg/day	NA
				Zinc	7.3E+03	mg/kg	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	3.0E-01	mg/kg/day	NA
			Exp. Route Total								2.E-06					1.E-02
		Exposure Point Total									9.E-06					2.E-01
	Exposure Medium Total										9.E-06					2.E-01
Sediment Soil Total											9.E-06					2.E-01

Table 7.18.CTE
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Lake-Wide
Receptor: Lake Recreational User
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface Water	Surface Water	DePue Lake Surface Water Lake-wide (Swimming Scenario)	Ingestion													
				Cadmium	3.5E-03	mg/L	1.5E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.8E-07	mg/kg/day	5.0E-04	mg/kg/day	4.E-04
				Lead	1.7E-02	mg/L	7.4E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	8.6E-07	mg/kg/day	NA	mg/kg/day	NA
				Manganese	4.8E-01	mg/L	2.1E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.4E-05	mg/kg/day	2.4E-02	mg/kg/day	1.E-03
				Ammonia	2.2E+01	mg/L	9.8E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.1E-03	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.2E+02	mg/L	5.1E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	6.0E-03	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	7.4E+00	mg/L	3.2E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.8E-04	mg/kg/day	1.6E+00	mg/kg/day	2.E-04
				Phosphorus	1.2E+00	mg/L	5.4E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	6.3E-05	mg/kg/day	NA	mg/kg/day	NA
				Sulfate	3.3E+02	mg/L	1.4E-03	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.7E-02	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					2.E-03
			Dermal													
				Cadmium	3.5E-06	mg/cm^3	1.0E-08	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.2E-07	mg/kg/day	1.3E-05	mg/kg/day	9.E-03
				Lead	1.7E-05	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Manganese	4.8E-04	mg/cm^3	1.4E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.6E-05	mg/kg/day	9.6E-04	mg/kg/day	2.E-02
				Ammonia	2.2E-02	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Chloride	1.2E-01	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Nitrate as N	7.4E-03	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	1.6E+00	mg/kg/day	NA
				Phosphorus	1.2E-03	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
				Sulfate	3.3E-01	mg/cm^3	NA	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	NA	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								0.E+00					3.E-02
		Exposure Point Total									0.E+00					3.E-02
		Exposure Medium Total									0.E+00					3.E-02
Surface Water Total											0.E+00					3.E-02
											Total of Receptor Risks Across All Media	9.E-06		Total of Receptor Hazards Across All Media		3.E-01

Note:
-- = Consituent is a mutagen, intakes/risk calculations are detailed in Appendix F.

TABLE 8.1.RME

CALCULATION OF RADIATION CANCER RISKS

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe:	
Receptor Population:	
Receptor Age:	

Medium	Exposure Medium	Exposure Point	Exposure Route	Radionuclide of Potential Concern	EPC		Risk Calculation Approach	Cancer Risk Calculations				Cancer Risk
					Value	Units		Intake/Activity		CSF		
								Value	Units	Value	Units	
			Exp. Route Total									
			Exp. Route Total									
		Exposure Point Total										
	Exposure Medium Total											
				NOT APPLICABLE								
			Exp. Route Total									
		Exposure Point Total										
	Exposure Medium Total											
Medium Total												
			Exp. Route Total									
			Exp. Route Total									
		Exposure Point Total										
	Exposure Medium Total											
Medium Total												

Total of Receptor Risks Across All Media

Table 9.1.RME

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain Area 1B
Receptor Population: Trespasser
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Floodplain Surface Soil Floodplain Area 1B	Benzo(a)anthracene	4.E-08	--	2.E-08	--	6.E-08	NA	NA	--	NA	0.E+00
			Benzo(a)pyrene	5.E-07	--	3.E-07	--	7.E-07	NA	NA	--	NA	0.E+00
			Benzo(b)fluoranthene	6.E-08	--	3.E-08	--	9.E-08	NA	NA	--	NA	0.E+00
			Benzo(g,h,i)perylene	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Benzo(k)fluoranthene	5.E-09	--	2.E-09	--	7.E-09	NA	NA	--	NA	0.E+00
			Chrysene	7.E-10	--	3.E-10	--	1.E-09	NA	NA	--	NA	0.E+00
			Dibenz(a,h)anthracene	2.E-07	--	9.E-08	--	3.E-07	NA	NA	--	NA	0.E+00
			Indeno(1,2,3-cd)pyrene	3.E-08	--	2.E-08	--	5.E-08	NA	NA	--	NA	0.E+00
			Aroclor 1254*	9.E-09	--	5.E-09	--	1.E-08	immune	1.E-03	--	7.E-04	2.E-03
			Dieldrin*	4.E-09	--	NA	--	4.E-09	liver	3.E-05	--	NA	3.E-05
			Antimony*	NA	--	NA	--	0.E+00	blood	2.E-03	--	NA	2.E-03
			Arsenic	8.E-06	--	2.E-06	--	9.E-06	skin	1.E-01	--	2.E-02	1.E-01
			Barium	NA	--	NA	--	0.E+00	kidney	3.E-03	--	NA	3.E-03
			Cadmium	NA	--	NA	--	0.E+00	kidney	2.E-01	--	3.E-02	2.E-01
			Cobalt*	NA	--	NA	--	0.E+00	NA	9.E-03	--	NA	9.E-03
			Iron*	NA	--	NA	--	0.E+00	NA	9.E-03	--	NA	9.E-03
			Lead*	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese*	NA	--	NA	--	0.E+00	CNS	1.E-03	--	NA	1.E-03
			Selenium*	NA	--	NA	--	0.E+00	skin	2.E-04	--	NA	2.E-04
			Silver*	NA	--	NA	--	0.E+00	skin	9.E-04	--	NA	9.E-04
			Zinc	NA	--	NA	--	0.E+00	blood	3.E-02	--	NA	3.E-02
			Fluoride*	NA	--	NA	--	0.E+00	dental fluorosis	6.E-06	--	NA	6.E-06
			Chemical Total	9.E-06	--	2.E-06	--	1.E-05		3E-01	--	5E-02	4.E-01
		Exposure Point Total						1.E-05					4.E-01
	Exposure Medium Total							1.E-05					4.E-01
Soil Total								1.E-05					4.E-01

Table 9.1.RME

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain Area 1B
Receptor Population: Trespasser
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater Seeps	Sediment	Sediment	Arsenic	1.E-06	--	7.E-07	--	2.E-06	skin	2.E-02	--	9.E-03	2.E-02
		Floodplain Area 1B	Cadmium	NA	--	NA	--	0.E+00	kidney	2.E-01	--	1.E-01	4.E-01
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Zinc	NA	--	NA	--	0.E+00	blood	5.E-02	--	NA	5.E-02
			Chemical Total	1.E-06	--	7.E-07	--	2.E-06		3E-01	--	1E-01	4.E-01
		Exposure Point Total						2.E-06					4.E-01
	Exposure Medium Total							2.E-06					4.E-01
Groundwater Seep Sediment Total								2.E-06					4.E-01
Groundwater Seeps	Surface Water	Surface Water	Cadmium	NA	--	NA	--	0.E+00	kidney	8.E-04	--	2.E-02	2.E-02
		Floodplain Area 1B	Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	6.E-04	--	8.E-03	9.E-03
			Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Phosphorus	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		1E-03	--	2E-02	3.E-02
		Exposure Point Total						0.E+00					3.E-02
	Exposure Medium Total							0.E+00					3.E-02
Groundwater Seep Surface Water Total								0.E+00					3.E-02
Receptor Total							Receptor Risk Total	1.E-05				Receptor HI Total	8.E-01

Total Immune HI Across All Media =	2.E-03
Total Body Weight HI Across All Media =	0.E+00
Total Skin HI Across All Media =	1.E-01
Total Kidney HI Across All Media =	6.E-01
Total Liver HI Across All Media =	3.E-05
Total CNS HI Across All Media =	1.E-02
Total Dental Fluorosis HI Across All Media =	6.E-06
Total Development HI Across All Media =	0.E+00
Total Blood HI Across All Media =	9.E-02

Table 9.1.CTE

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain Area 1B
Receptor Population: Trespasser
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Floodplain Surface Soil Floodplain Area 1B	Benzo(a)anthracene	7.E-09	--	4.E-09	--	1.E-08	NA	NA	--	NA	0.E+00
			Benzo(a)pyrene	8.E-08	--	5.E-08	--	1.E-07	NA	NA	--	NA	0.E+00
			Benzo(b)fluoranthene	1.E-08	--	6.E-09	--	2.E-08	NA	NA	--	NA	0.E+00
			Benzo(g,h,i)perylene	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Benzo(k)fluoranthene	8.E-10	--	5.E-10	--	1.E-09	NA	NA	--	NA	0.E+00
			Chrysene	1.E-10	--	7.E-11	--	2.E-10	NA	NA	--	NA	0.E+00
			Dibenz(a,h)anthracene	3.E-08	--	2.E-08	--	5.E-08	NA	NA	--	NA	0.E+00
			Indeno(1,2,3-cd)pyrene	6.E-09	--	3.E-09	--	9.E-09	NA	NA	--	NA	0.E+00
			Aroclor 1254*	2.E-09	--	1.E-09	--	3.E-09	immune	3.E-04	--	3.E-05	3.E-04
			Dieldrin*	8.E-10	--	NA	--	8.E-10	liver	8.E-06	--	NA	8.E-06
			Antimony*	NA	--	NA	--	0.E+00	blood	6.E-04	--	NA	6.E-04
			Arsenic	1.E-06	--	3.E-07	--	2.E-06	skin	2.E-02	--	6.E-03	3.E-02
			Barium	NA	--	NA	--	0.E+00	kidney	8.E-04	--	NA	8.E-04
			Cadmium	NA	--	NA	--	0.E+00	kidney	4.E-02	--	8.E-03	5.E-02
			Cobalt*	NA	--	NA	--	0.E+00	NA	2.E-03	--	NA	2.E-03
			Iron*	NA	--	NA	--	0.E+00	NA	3.E-04	--	NA	3.E-04
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese*	NA	--	NA	--	0.E+00	CNS	3.E-04	--	NA	3.E-04
			Selenium*	NA	--	NA	--	0.E+00	skin	6.E-05	--	NA	6.E-05
			Silver*	NA	--	NA	--	0.E+00	skin	2.E-04	--	NA	2.E-04
			Zinc	NA	--	NA	--	0.E+00	blood	9.E-03	--	NA	9.E-03
			Fluoride*	NA	--	NA	--	0.E+00	dental fluorosis	6.E-06	--	NA	6.E-06
			Chemical Total	2.E-06	--	4.E-07	--	2.E-06		8E-02	--	1E-02	1.E-01
		Exposure Point Total						2.E-06					1.E-01
	Exposure Medium Total							2.E-06					1.E-01
Soil Total								2.E-06					1.E-01

Table 9.1.CTE

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain Area 1B
Receptor Population: Trespasser
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater Seeps	Sediment	Sediment	Arsenic	2.E-07	--	5.E-08	--	3.E-07	skin	4.E-03	--	9.E-04	5.E-03
		Floodplain Area 1B	Cadmium	NA	--	NA	--	0.E+00	kidney	6.E-02	--	1.E-02	7.E-02
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Zinc	NA	--	NA	--	0.E+00	blood	1.E-02	--	NA	1.E-02
			Chemical Total	2.E-07	--	5.E-08	--	3.E-07		6E-02	--	1E-02	8.E-02
		Exposure Point Total						3.E-07					8.E-02
	Exposure Medium Total							3.E-07					8.E-02
Groundwater Seep Sediment Total								3.E-07					8.E-02
Groundwater Seeps	Surface Water	Surface Water	Cadmium	NA	--	NA	--	0.E+00	kidney	4.E-04	--	8.E-03	9.E-03
		Floodplain Area 1B	Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	3.E-04	--	4.E-03	4.E-03
			Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Phosphorus	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		7E-04	--	1E-02	1.E-02
		Exposure Point Total						0.E+00					1.E-02
	Exposure Medium Total							0.E+00					1.E-02
Groundwater Seep Surface Water Total								0.E+00					1.E-02
Receptor Total							Receptor Risk Total	2.E-06				Receptor HI Total	2.E-01

Total Immune HI Across All Media =	3.E-04
Total Body Weight HI Across All Media =	0.E+00
Total Skin HI Across All Media =	4.E-02
Total Kidney HI Across All Media =	1.E-01
Total Liver HI Across All Media =	8.E-06
Total CNS HI Across All Media =	5.E-03
Total Dental Fluorosis HI Across All Media =	6.E-06
Total Development HI Across All Media =	0.E+00
Total Blood HI Across All Media =	2.E-02

Table 9.2.RME

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain Area 1C
Receptor Population: Trespasser
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Floodplain Surface Soil Floodplain Area 1C	Aroclor 1254	2.E-08	--	8.E-09	--	2.E-08	immune	2.E-03	--	1.E-03	3.E-03
			Aroclor 1260*	3.E-09	--	2.E-09	--	5.E-09	immune	7.E-05	--	2.E-04	3.E-04
			Dieldrin*	6.E-09	--	NA	--	6.E-09	liver	8.E-06	--	NA	8.E-06
			Arsenic	7.E-07	--	1.E-07	--	8.E-07	skin	9.E-03	--	2.E-03	1.E-02
			Barium*	NA	--	NA	--	0.E+00	kidney	2.E-04	--	NA	2.E-04
			Cadmium	NA	--	NA	--	0.E+00	kidney	2.E-03	--	3.E-01	3.E-01
			Chromium*	NA	--	NA	--	0.E+00	none reported	4.E-04	--	NA	4.E-04
			Cobalt*	NA	--	NA	--	0.E+00	NA	2.E-03	--	NA	2.E-03
			Copper	NA	--	NA	--	0.E+00	NA	3.E-03	--	NA	3.E-03
			Iron*	NA	--	NA	--	0.E+00	NA	2.E-03	--	NA	2.E-03
			Lead*	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese*	NA	--	NA	--	0.E+00	CNS	5.E-04	--	NA	5.E-04
			Selenium*	NA	--	NA	--	0.E+00	skin	2.E-05	--	NA	2.E-05
			Zinc	NA	--	NA	--	0.E+00	blood	2.E-03	--	NA	2.E-03
			Fluoride*	NA	--	NA	--	0.E+00	dental fluorosis	5.E-07	--	NA	5.E-07
			Chemical Total	7.E-07	--	1.E-07	--	8.E-07		2E-02	--	3E-01	3.E-01
		Exposure Point Total						8.E-07					3.E-01
	Exposure Medium Total							8.E-07					3.E-01
Soil Total								8.E-07					3.E-01
Groundwater Seeps	Surface Water	Surface Water Floodplain Area 1C	Iron	NA	--	NA	--	0.E+00	NA	7.E-04	--	NA	7.E-04
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	2.E-03	--	3.E-02	3.E-02
			Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Phosphorus	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		2E-03	--	3E-02	3.E-02
		Exposure Point Total						0.E+00					3.E-02
	Exposure Medium Total							0.E+00					3.E-02
Groundwater Seep Surface Water Total								0.E+00					3.E-02
Receptor Total							Receptor Risk Total	8.E-07				Receptor HI Total	3.E-01

Total Immune HI Across All Media =	4.E-03
Total Body Weight HI Across All Media =	0.E+00
Total Skin HI Across All Media =	1.E-02
Total Kidney HI Across All Media =	3.E-01
Total Liver HI Across All Media =	8.E-06
Total CNS HI Across All Media =	3.E-02
Total Dental Fluorosis HI Across All Media =	5.E-07
Total Development HI Across All Media =	0.E+00
Total Blood HI Across All Media =	2.E-03

Table 9.2.CTE

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain Area 1C
Receptor Population: Trespasser
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Floodplain Surface Soil Floodplain Area 1C	Aroclor 1254	3.E-09	--	2.E-09	--	5.E-09	immune	5.5.E-04	--	4.E-04	9.E-04
			Aroclor 1260*	5.E-10	--	3.E-10	--	9.E-10	immune	1.1.E-04	--	7.E-05	2.E-04
			Dieldrin*	1.E-09	--	NA	--	1.E-09	liver	1.1.E-05	--	NA	1.E-05
			Arsenic	1.E-07	--	3.E-08	--	1.E-07	skin	1.9.E-03	--	4.E-04	2.E-03
			Barium*	NA	--	NA	--	0.E+00	kidney	2.8.E-04	--	NA	3.E-04
			Cadmium	NA	--	NA	--	0.E+00	kidney	2.9.E-03	--	5.E-04	3.E-03
			Chromium*	NA	--	NA	--	0.E+00	none reported	6.3.E-04	--	NA	6.E-04
			Cobalt*	NA	--	NA	--	0.E+00	NA	3.6.E-03	--	NA	4.E-03
			Copper	NA	--	NA	--	0.E+00	NA	3.9.E-03	--	NA	4.E-03
			Iron*	NA	--	NA	--	0.E+00	NA	2.9.E-03	--	NA	3.E-03
			Lead*	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese*	NA	--	NA	--	0.E+00	CNS	6.6.E-04	--	NA	7.E-04
			Selenium*	NA	--	NA	--	0.E+00	skin	3.2.E-05	--	NA	3.E-05
			Zinc	NA	--	NA	--	0.E+00	blood	2.3.E-03	--	NA	2.E-03
			Fluoride*	NA	--	NA	--	0.E+00	dental fluorosis	6.8.E-07	--	NA	7.E-07
			Chemical Total	1.E-07	--	3.E-08	--	1.E-07		2E-02	--	1E-03	2.E-02
		Exposure Point Total						1.E-07					2.E-02
	Exposure Medium Total							1.E-07					2.E-02
Soil Total								1.E-07					2.E-02
Groundwater Seeps	Surface Water	Surface Water Floodplain Area 1C	Iron	NA	--	NA	--	0.E+00	NA	4.E-04	--	NA	4.E-04
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	1.E-03	--	1.E-02	2.E-02
			Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Phosphorus	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		1E-03	--	1E-02	2.E-02
		Exposure Point Total						0.E+00					2.E-02
	Exposure Medium Total							0.E+00					2.E-02
Groundwater Seep Surface Water Total								0.E+00					2.E-02
Receptor Total							Receptor Risk Total	1.E-07				Receptor HI Total	4.E-02

Total Immune HI Across All Media =	1.E-03
Total Body Weight HI Across All Media =	0.E+00
Total Skin HI Across All Media =	2.E-03
Total Kidney HI Across All Media =	4.E-03
Total Liver HI Across All Media =	1.E-05
Total CNS HI Across All Media =	2.E-02
Total Dental Fluorosis HI Across All Media =	7.E-07
Total Development HI Across All Media =	0.E+00
Total Blood HI Across All Media =	2.E-03

Table 9.3.CTE

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain Area 2
Receptor Population: Trespasser
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Floodplain Surface Soil Floodplain Area 2	Benzo(a)anthracene	1.E-09	--	7.E-10	--	2.E-09	NA	NA	--	NA	0.E+00
			Benzo(a)pyrene	2.E-08	--	9.E-09	--	3.E-08	NA	NA	--	NA	0.E+00
			Benzo(b)fluoranthene	2.E-09	--	9.E-10	--	3.E-09	NA	NA	--	NA	0.E+00
			Benzo(k)fluoranthene	1.E-10	--	9.E-11	--	2.E-10	NA	NA	--	NA	0.E+00
			Chrysene	2.E-11	--	9.E-12	--	3.E-11	NA	NA	--	NA	0.E+00
			Indeno(1,2,3-cd)pyrene	1.E-09	--	8.E-10	--	2.E-09	NA	NA	--	NA	0.E+00
			Arsenic	5.E-08	--	1.E-08	--	6.E-08	skin	9.E-04	--	2.E-04	1.E-03
			Barium	NA	--	NA	--	0.E+00	kidney	1.E-04	--	NA	1.E-04
			Cadmium *	NA	--	NA	--	0.E+00	kidney	5.E-04	--	9.E-05	6.E-04
			Chromium*	NA	--	NA	--	0.E+00	none reported	6.E-04	--	NA	6.E-04
			Cobalt*	NA	--	NA	--	0.E+00	NA	1.E-03	--	NA	1.E-03
			Iron	NA	--	NA	--	0.E+00	NA	2.E-03	--	NA	2.E-03
			Lead*	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese *	NA	--	NA	--	0.E+00	CNS	2.E-04	--	NA	2.E-04
			Chemical Total	7.E-08	--	2.E-08	--	9.E-08		5E-03	--	3E-04	6.E-03
		Exposure Point Total						9.E-08					6.E-03
	Exposure Medium Total							9.E-08					6.E-03
Soil Total								9.E-08					6.E-03
Receptor Total							Receptor Risk Total	9.E-08				Receptor HI Total	6.E-03

Total Immune HI Across All Media =	0.E+00
Total Body Weight HI Across All Media =	0.E+00
Total Skin HI Across All Media =	1.E-03
Total Kidney HI Across All Media =	7.E-04
Total Liver HI Across All Media =	0.E+00
Total CNS HI Across All Media =	2.E-04
Total Development HI Across All Media =	0.E+00
Total Blood HI Across All Media =	0.E+00

Table 9.3.RME

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain Area 2
Receptor Population: Trespasser
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Floodplain Surface Soil Floodplain Area 2	Benzo(a)anthracene	6.E-09	--	3.E-09	--	1.E-08	NA	NA	--	NA	0.E+00
			Benzo(a)pyrene	9.E-08	--	5.E-08	--	1.E-07	NA	NA	--	NA	0.E+00
			Benzo(b)fluoranthene	9.E-09	--	5.E-09	--	1.E-08	NA	NA	--	NA	0.E+00
			Benzo(k)fluoranthene	9.E-10	--	4.E-10	--	1.E-09	NA	NA	--	NA	0.E+00
			Chrysene	9.E-11	--	5.E-11	--	1.E-10	NA	NA	--	NA	0.E+00
			Indeno(1,2,3-cd)pyrene	8.E-09	--	4.E-09	--	1.E-08	NA	NA	--	NA	0.E+00
			Arsenic	3.E-07	--	5.E-08	--	3.E-07	skin	4.E-03	--	7.E-04	4.E-03
			Barium	NA	--	NA	--	0.E+00	kidney	4.E-04	--	NA	4.E-04
			Cadmium *	NA	--	NA	--	0.E+00	kidney	2.E-03	--	3.E-04	2.E-03
			Chromium*	NA	--	NA	--	0.E+00	none reported	3.E-03	--	NA	3.E-03
			Cobalt*	NA	--	NA	--	0.E+00	NA	6.E-03	--	NA	6.E-03
			Iron	NA	--	NA	--	0.E+00	NA	7.E-03	--	NA	7.E-03
			Lead*	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese *	NA	--	NA	--	0.E+00	CNS	9.E-04	--	NA	9.E-04
			Chemical Total	4.E-07	--	1.E-07	--	5.E-07		2E-02	--	1E-03	2.E-02
		Exposure Point Total						5.E-07					2.E-02
	Exposure Medium Total							5.E-07					2.E-02
Soil Total								5.E-07					2.E-02
Receptor Total							Receptor Risk Total	5.E-07				Receptor HI Total	2.E-02

Total Immune HI Across All Media =	0.E+00
Total Body Weight HI Across All Media =	0.E+00
Total Skin HI Across All Media =	4.E-03
Total Kidney HI Across All Media =	3.E-03
Total Liver HI Across All Media =	0.E+00
Total CNS HI Across All Media =	9.E-04
Total Development HI Across All Media =	0.E+00
Total Blood HI Across All Media =	0.E+00

Table 9.4.RME

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain Area 3
Receptor Population: Trespasser
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Floodplain Surface Soil Floodplain Area 3	Benzo(a)anthracene	6.E-09	--	3.E-09	--	1.E-08	NA	NA	--	NA	0.E+00
			Benzo(a)pyrene	7.E-08	--	4.E-08	--	1.E-07	NA	NA	--	NA	0.E+00
			Benzo(b)fluoranthene	1.E-08	--	7.E-09	--	2.E-08	NA	NA	--	NA	0.E+00
			Benzo(k)fluoranthene	4.E-10	--	2.E-10	--	6.E-10	NA	NA	--	NA	0.E+00
			Chrysene	8.E-11	--	4.E-11	--	1.E-10	NA	NA	--	NA	0.E+00
			Dibenz(a,h)anthracene	2.E-08	--	9.E-09	--	3.E-08	NA	NA	--	NA	0.E+00
			Indeno(1,2,3-cd)pyrene	6.E-09	--	3.E-09	--	1.E-08	NA	NA	--	NA	0.E+00
			Beta-BHC*	1.E-09	--	NA	--	1.E-09	liver	8.E-06	--	NA	8.E-06
			Antimony*	NA	--	NA	--	0.E+00	blood	6.E-04	--	NA	6.E-04
			Chromium*	NA	--	NA	--	0.E+00	none reported	3.E-03	--	NA	3.E-03
			Chemical Total	0.E+00	--	0.E+00	--	2.E-07		3E-03	--	0E+00	3.E-03
		Exposure Point Total						2.E-07					3.E-03
	Exposure Medium Total							2.E-07					3.E-03
Soil Total								2.E-07					3.E-03
Receptor Total							Receptor Risk Total	2.E-07				Receptor HI Total	3.E-03

Total Immune HI Across All Media =	0.E+00
Total Body Weight HI Across All Media =	0.E+00
Total Skin HI Across All Media =	0.E+00
Total Kidney HI Across All Media =	0.E+00
Total Liver HI Across All Media =	8.E-06
Total CNS HI Across All Media =	0.E+00
Total Development HI Across All Media =	0.E+00
Total Blood HI Across All Media =	6.E-04

Table 9.4.CTE

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain Area 3
Receptor Population: Trespasser
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Floodplain Surface Soil Floodplain Area 3	Benzo(a)anthracene	1.E-09	--	7.E-10	--	2.E-09	NA	NA	--	NA	0.E+00
			Benzo(a)pyrene	1.E-08	--	8.E-09	--	2.E-08	NA	NA	--	NA	0.E+00
			Benzo(b)fluoranthene	2.E-09	--	1.E-09	--	4.E-09	NA	NA	--	NA	0.E+00
			Benzo(k)fluoranthene	7.E-11	--	4.E-11	--	1.E-10	NA	NA	--	NA	0.E+00
			Chrysene	1.E-11	--	8.E-12	--	2.E-11	NA	NA	--	NA	0.E+00
			Dibenz(a,h)anthracene	3.E-09	--	2.E-09	--	5.E-09	NA	NA	--	NA	0.E+00
			Indeno(1,2,3-cd)pyrene	1.E-09	--	7.E-10	--	2.E-09	NA	NA	--	NA	0.E+00
			Beta-BHC*	3.E-10	--	NA	--	3.E-10	liver	2.E-06	--	NA	2.E-06
			Antimony*	NA	--	NA	--	0.E+00	blood	1.E-04	--	NA	1.E-04
			Chromium*	NA	--	NA	--	0.E+00	none reported	7.E-04	--	NA	7.E-04
			Chemical Total	0.E+00	--	0.E+00	--	3.E-08		7E-04	--	0E+00	8.E-04
		Exposure Point Total						3.E-08					8.E-04
	Exposure Medium Total							3.E-08					8.E-04
Soil Total								3.E-08					8.E-04
Receptor Total							Receptor Risk Total	3.E-08				Receptor HI Total	8.E-04

Total Immune HI Across All Media =	0.E+00
Total Body Weight HI Across All Media =	0.E+00
Total Skin HI Across All Media =	0.E+00
Total Kidney HI Across All Media =	0.E+00
Total Liver HI Across All Media =	2.E-06
Total CNS HI Across All Media =	0.E+00
Total Development HI Across All Media =	0.E+00
Total Blood HI Across All Media =	1.E-04

Table 9.5.RME

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor Population: Village Park Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Sediment	Sediment	DePue Lake Sediment Sediment Area 1A (Wading Scenario)	Benzo(a)anthracene	1.E-07	--	2.E-07	--	3.E-07	NA	NA	--	NA	0.E+00
			Benzo(a)pyrene	9.E-07	--	1.E-06	--	2.E-06	NA	NA	--	NA	0.E+00
			Benzo(b)fluoranthene	7.E-08	--	1.E-07	--	2.E-07	NA	NA	--	NA	0.E+00
			Benzo(g,h,i)perylene	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Benzo(k)fluoranthene	8.E-09	--	1.E-08	--	2.E-08	NA	NA	--	NA	0.E+00
			Chrysene	9.E-10	--	1.E-09	--	2.E-09	NA	NA	--	NA	0.E+00
			Dibenz(a,h)anthracene	1.E-07	--	2.E-07	--	4.E-07	NA	NA	--	NA	0.E+00
			Indeno(1,2,3-cd)pyrene	4.E-08	--	7.E-08	--	1.E-07	NA	NA	--	NA	0.E+00
			Naphthalene	NA	--	NA	--	0.E+00	body weight	5.E-06	--	7.E-06	1.E-05
			Arsenic	2.E-07	--	1.E-07	--	4.E-07	skin	1.E-03	--	8.E-04	2.E-03
			Barium	NA	--	NA	--	0.E+00	kidney	9.E-06	--	NA	9.E-06
			Cadmium	NA	--	NA	--	0.E+00	kidney	4.E-03	--	2.E-03	5.E-03
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	1.E-06	--	2.E-06	--	3.E-06		5E-03	--	2E-03	8.E-03
		Exposure Point Total						3.E-06					8.E-03
	Exposure Medium Total							3.E-06					8.E-03
Sediment Total								3.E-06					8.E-03
Surface Water	Surface Water	DePue Lake Surface Water Eastern Portion of Lake (Wading Scenario)	Cadmium	NA	--	NA	--	0.E+00	kidney	8.E-05	--	2.E-03	2.E-03
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	2.E-04	--	2.E-03	3.E-03
			Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chloride	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Nitrate as N	NA	--	NA	--	0.E+00	blood	9.E-05	--	NA	9.E-05
			Phosphorus	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		3E-04	--	4E-03	4.E-03
		Exposure Point Total						0.E+00					4.E-03
	Exposure Medium Total							0.E+00					4.E-03
Surface Water Total								0.E+00					4.E-03

Table 9.5.RME

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor Population: Village Park Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater Seeps	Sediment	Seep Sediment	Arsenic	2.E-07	--	1.E-07	--	3.E-07	skin	1.E-03	--	7.E-04	2.E-03
		Floodplain Area 1A	Chemical Total	2.E-07	--	1.E-07	--	3.E-07		1E-03	--	7E-04	2.E-03
		Exposure Point Total						3.E-07					2.E-03
	Exposure Medium Total							3.E-07					2.E-03
Groundwater Seep Sediment Total								3.E-07					2.E-03
Groundwater Seeps	Surface Water	Seep Surface Water Floodplain Area 1A	Manganese	NA	--	NA	--	0.E+00	CNS	2.E-04	--	3.E-03	3.E-03
			Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		2E-04	--	3E-03	3.E-03
		Exposure Point Total						0.E+00					3.E-03
	Exposure Medium Total							0.E+00					3.E-03
Groundwater Seep Surface Water Total								0.E+00					3.E-03
Receptor Total							Receptor Risk Total	4.E-06				Receptor HI Total	2.E-02

Total Immune HI Across All Media =	0.E+00
Total Body Weight HI Across All Media =	1.E-05
Total Skin HI Across All Media =	4.E-03
Total Kidney HI Across All Media =	7.E-03
Total Liver HI Across All Media =	0.E+00
Total CNS HI Across All Media =	5.E-03
Total Development HI Across All Media =	0.E+00
Total Blood HI Across All Media =	9.E-05

Table 9.5.CTE

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor Population: Village Park Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Sediment	Sediment	DePue Lake Sediment Sediment Area 1A (Wading Scenario)	Benzo(a)anthracene	1.E-08	--	8.E-09	--	2.E-08	NA	NA	--	NA	0.E+00
			Benzo(a)pyrene	1.E-07	--	7.E-08	--	2.E-07	NA	NA	--	NA	0.E+00
			Benzo(b)fluoranthene	1.E-08	--	6.E-09	--	2.E-08	NA	NA	--	NA	0.E+00
			Benzo(g,h,i)perylene	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Benzo(k)fluoranthene	1.E-09	--	6.E-10	--	2.E-09	NA	NA	--	NA	0.E+00
			Chrysene	1.E-10	--	7.E-11	--	2.E-10	NA	NA	--	NA	0.E+00
			Dibenz(a,h)anthracene	2.E-08	--	1.E-08	--	3.E-08	NA	NA	--	NA	0.E+00
			Indeno(1,2,3-cd)pyrene	6.E-09	--	4.E-09	--	1.E-08	NA	NA	--	NA	0.E+00
			Naphthalene	NA	--	NA	--	0.E+00	body weight	1.E-06	--	7.E-07	2.E-06
			Arsenic	2.E-08	--	5.E-09	--	3.E-08	skin	4.E-04	--	8.E-05	5.E-04
			Barium	NA	--	NA	--	0.E+00	kidney	1.E-06	--	NA	1.E-06
			Cadmium	NA	--	NA	--	0.E+00	kidney	9.E-04	--	2.E-04	1.E-03
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	2.E-07	--	1.E-07	--	3.E-07		1E-03	--	2E-04	2.E-03
		Exposure Point Total						3.E-07					2.E-03
	Exposure Medium Total							3.E-07					2.E-03
Sediment Total								3.E-07					2.E-03
Surface Water	Surface Water	DePue Lake Surface Water Eastern Portion of Lake (Wading Scenario)	Cadmium	NA	--	NA	--	0.E+00	kidney	4.E-05	--	8.E-04	9.E-04
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	9.E-05	--	1.E-03	1.E-03
			Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chloride	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Nitrate as N	NA	--	NA	--	0.E+00	blood	4.E-05	--	NA	4.E-05
			Phosphorus	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		2E-04	--	2E-03	2.E-03
		Exposure Point Total						0.E+00					2.E-03
	Exposure Medium Total							0.E+00					2.E-03
Surface Water Total								0.E+00					2.E-03

Table 9.5.CTE

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor Population: Village Park Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater Seeps	Sediment	Seep Sediment	Arsenic	2.E-08	--	4.E-09	--	2.E-08	skin	3.E-04	--	7.E-05	4.E-04
		Floodplain Area 1A	Chemical Total	2.E-08	--	4.E-09	--	2.E-08		3E-04	--	7E-05	4.E-04
		Exposure Point Total						2.E-08					4.E-04
	Exposure Medium Total							2.E-08					4.E-04
Groundwater Seep Sediment Total								2.E-08					4.E-04
Groundwater Seeps	Surface Water	Seep Surface Water Floodplain Area 1A	Manganese	NA	--	NA	--	0.E+00	CNS	9.E-05	--	1.E-03	1.E-03
			Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		9E-05	--	1E-03	1.E-03
		Exposure Point Total						0.E+00					1.E-03
	Exposure Medium Total							0.E+00					1.E-03
Groundwater Seep Surface Water Total								0.E+00					1.E-03
Receptor Total							Receptor Risk Total	3.E-07				Receptor HI Total	6.E-03

Total Immune HI Across All Media =	0.E+00
Total Body Weight HI Across All Media =	2.E-06
Total Skin HI Across All Media =	8.E-04
Total Kidney HI Across All Media =	2.E-03
Total Liver HI Across All Media =	0.E+00
Total CNS HI Across All Media =	3.E-03
Total Development HI Across All Media =	0.E+00
Total Blood HI Across All Media =	4.E-05

Table 9.5A.RME

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor Population: Village Park Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Sediment	Sediment	DePue Lake Sediment Sediment Area 1A (Swimming Scenario)	Benzo(a)anthracene	1.E-07	--	5.E-07	--	6.E-07	NA	NA	--	NA	0.E+00
			Benzo(a)pyrene	9.E-07	--	4.E-06	--	5.E-06	NA	NA	--	NA	0.E+00
			Benzo(b)fluoranthene	7.E-08	--	3.E-07	--	4.E-07	NA	NA	--	NA	0.E+00
			Benzo(g,h,i)perylene	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Benzo(k)fluoranthene	8.E-09	--	4.E-08	--	4.E-08	NA	NA	--	NA	0.E+00
			Chrysene	9.E-10	--	4.E-09	--	5.E-09	NA	NA	--	NA	0.E+00
			Dibenz(a,h)anthracene	1.E-07	--	7.E-07	--	8.E-07	NA	NA	--	NA	0.E+00
			Indeno(1,2,3-cd)pyrene	4.E-08	--	2.E-07	--	3.E-07	NA	NA	--	NA	0.E+00
			Naphthalene	NA	--	NA	--	0.E+00	body weight	5.E-06	--	2.E-05	3.E-05
			Arsenic	2.E-07	--	4.E-07	--	6.E-07	skin	1.E-03	--	3.E-03	4.E-03
			Barium	NA	--	NA	--	0.E+00	kidney	9.E-06	--	NA	9.E-06
			Cadmium	NA	--	NA	--	0.E+00	kidney	4.E-03	--	5.E-03	9.E-03
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	1.E-06	--	6.E-06	--	8.E-06		5E-03	--	8E-03	1.E-02
		Exposure Point Total						8.E-06					1.E-02
	Exposure Medium Total							8.E-06					1.E-02
Sediment Total								8.E-06					1.E-02
Surface Water	Surface Water	DePue Lake Surface Water Eastern Portion of Lake (Swimming Scenario)	Cadmium	NA	--	NA	--	0.E+00	kidney	8.E-05	--	5.E-03	5.E-03
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	2.E-04	--	8.E-03	8.E-03
			Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chloride	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Nitrate as N	NA	--	NA	--	0.E+00	blood	9.E-05	--	NA	9.E-05
			Phosphorus	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		3E-04	--	1E-02	1.E-02
		Exposure Point Total						0.E+00					1.E-02
	Exposure Medium Total							0.E+00					1.E-02
Surface Water Total								0.E+00					1.E-02

Table 9.5A.RME

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor Population: Village Park Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater Seeps	Sediment	Seep Sediment	Arsenic	2.E-07	--	1.E-07	--	3.E-07	skin	1.E-03	--	7.E-04	2.E-03
		Floodplain Area 1A	Chemical Total	2.E-07	--	1.E-07	--	3.E-07		1E-03	--	7E-04	2.E-03
		Exposure Point Total						3.E-07					2.E-03
	Exposure Medium Total							3.E-07					2.E-03
Groundwater Seep Sediment Total								3.E-07					2.E-03
Groundwater Seeps	Surface Water	Seep Surface Water Floodplain Area 1A	Manganese	NA	--	NA	--	0.E+00	CNS	2.E-04	--	3.E-03	3.E-03
			Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		2E-04	--	3E-03	3.E-03
		Exposure Point Total						0.E+00					3.E-03
	Exposure Medium Total							0.E+00					3.E-03
Groundwater Seep Surface Water Total								0.E+00					3.E-03
Receptor Total							Receptor Risk Total	8.E-06				Receptor HI Total	3.E-02

Total Immune HI Across All Media =	0.E+00
Total Body Weight HI Across All Media =	3.E-05
Total Skin HI Across All Media =	6.E-03
Total Kidney HI Across All Media =	1.E-02
Total Liver HI Across All Media =	0.E+00
Total CNS HI Across All Media =	1.E-02
Total Development HI Across All Media =	0.E+00
Total Blood HI Across All Media =	9.E-05

Table 9.5A.CTE

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor Population: Village Park Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Sediment	Sediment	DePue Lake Sediment Sediment Area 1A (Swimming Scenario)	Benzo(a)anthracene	1.E-08	--	3.E-08	--	4.E-08	NA	NA	--	NA	0.E+00
			Benzo(a)pyrene	1.E-07	--	2.E-07	--	3.E-07	NA	NA	--	NA	0.E+00
			Benzo(b)fluoranthene	1.E-08	--	2.E-08	--	3.E-08	NA	NA	--	NA	0.E+00
			Benzo(g,h,i)perylene	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Benzo(k)fluoranthene	1.E-09	--	2.E-09	--	3.E-09	NA	NA	--	NA	0.E+00
			Chrysene	1.E-10	--	2.E-10	--	4.E-10	NA	NA	--	NA	0.E+00
			Dibenz(a,h)anthracene	2.E-08	--	4.E-08	--	6.E-08	NA	NA	--	NA	0.E+00
			Indeno(1,2,3-cd)pyrene	6.E-09	--	1.E-08	--	2.E-08	NA	NA	--	NA	0.E+00
			Naphthalene	NA	--	NA	--	0.E+00	body weight	1.E-06	--	2.E-06	3.E-06
			Arsenic	2.E-08	--	5.E-09	--	3.E-08	skin	4.E-04	--	3.E-04	6.E-04
			Barium	NA	--	NA	--	0.E+00	kidney	2.E-06	--	NA	2.E-06
			Cadmium	NA	--	NA	--	0.E+00	kidney	9.E-04	--	5.E-04	1.E-03
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	2.E-07	--	3.E-07	--	5.E-07		1E-03	--	8E-04	2.E-03
		Exposure Point Total						5.E-07					2.E-03
	Exposure Medium Total							5.E-07					2.E-03
Sediment Total								5.E-07					2.E-03
Surface Water	Surface Water	DePue Lake Surface Water Eastern Portion of Lake (Swimming Scenario)	Cadmium	NA	--	NA	--	0.E+00	kidney	4.E-05	--	3.E-03	3.E-03
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	9.E-05	--	4.E-03	4.E-03
			Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chloride	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Nitrate as N	NA	--	NA	--	0.E+00	blood	4.E-05	--	NA	4.E-05
			Phosphorus	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		2E-04	--	7E-03	7.E-03
		Exposure Point Total						0.E+00					7.E-03
	Exposure Medium Total							0.E+00					7.E-03
Surface Water Total								0.E+00					7.E-03

Table 9.5A.CTE

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor Population: Village Park Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater Seeps	Sediment	Seep Sediment	Arsenic	2.E-08	--	4.E-09	--	2.E-08	skin	3.E-04	--	7.E-05	4.E-04
		Floodplain Area 1A	Chemical Total	2.E-08	--	4.E-09	--	2.E-08		3E-04	--	7E-05	4.E-04
		Exposure Point Total						2.E-08					4.E-04
	Exposure Medium Total							2.E-08					4.E-04
Groundwater Seep Sediment Total								2.E-08					4.E-04
Groundwater Seeps	Surface Water	Seep Surface Water Floodplain Area 1A	Manganese	NA	--	NA	--	0.E+00	CNS	9.E-05	--	1.E-03	1.E-03
			Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		9E-05	--	1E-03	1.E-03
		Exposure Point Total						0.E+00					1.E-03
	Exposure Medium Total							0.E+00					1.E-03
Groundwater Seep Surface Water Total								0.E+00					1.E-03
Receptor Total							Receptor Risk Total	5.E-07				Receptor HI Total	1.E-02

Total Immune HI Across All Media =	0.E+00
Total Body Weight HI Across All Media =	3.E-06
Total Skin HI Across All Media =	1.E-03
Total Kidney HI Across All Media =	4.E-03
Total Liver HI Across All Media =	0.E+00
Total CNS HI Across All Media =	5.E-03
Total Development HI Across All Media =	0.E+00
Total Blood HI Across All Media =	4.E-05

Table 9.6.RME
Summary of Receptor Risks and Hazards for COPCs
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor Population: Village Park Recreational User
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Sediment	Sediment	DePue Lake Sediment Sediment Area 1A (Wading Scenario)	Benzo(a)anthracene	7.E-07	--	2.E-07	--	1.E-06	NA	NA	--	NA	0.E+00
			Benzo(a)pyrene	6.E-06	--	2.E-06	--	8.E-06	NA	NA	--	NA	0.E+00
			Benzo(b)fluoranthene	5.E-07	--	2.E-07	--	7.E-07	NA	NA	--	NA	0.E+00
			Benzo(g,h,i)perylene	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Benzo(k)fluoranthene	6.E-08	--	2.E-08	--	7.E-08	NA	NA	--	NA	0.E+00
			Chrysene	6.E-09	--	2.E-09	--	8.E-09	NA	NA	--	NA	0.E+00
			Dibenz(a,h)anthracene	1.E-06	--	3.E-07	--	1.E-06	NA	NA	--	NA	0.E+00
			Indeno(1,2,3-cd)pyrene	3.E-07	--	1.E-07	--	4.E-07	NA	NA	--	NA	0.E+00
			Naphthalene	NA	--	NA	--	0.E+00	body weight	4.E-05	--	1.E-05	6.E-05
			Arsenic	5.E-07	--	7.E-08	--	6.E-07	skin	1.E-02	--	2.E-03	2.E-02
			Barium	NA	--	NA	--	0.E+00	kidney	9.E-05	--	NA	9.E-05
			Cadmium	NA	--	NA	--	0.E+00	kidney	3.E-02	--	3.E-03	4.E-02
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	9.E-06	--	3.E-06	--	1.E-05		5E-02	--	5E-03	5.E-02
		Exposure Point Total						1.E-05					5.E-02
	Exposure Medium Total							1.E-05					5.E-02
Sediment Total								1.E-05					5.E-02
Surface Water	Surface Water	DePue Lake Surface Water Eastern Portion of Lake (Wading Scenario)	Cadmium	NA	--	NA	--	0.E+00	kidney	4.E-04	--	3.E-03	4.E-03
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	8.E-04	--	5.E-03	6.E-03
			Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chloride	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Nitrate as N	NA	--	NA	--	0.E+00	blood	4.E-04	--	NA	4.E-04
			Phosphorus	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		2E-03	--	8E-03	1.E-02
		Exposure Point Total						0.E+00					1.E-02
	Exposure Medium Total							0.E+00					1.E-02
Surface Water Total								0.E+00					1.E-02

Table 9.6.RME

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor Population: Village Park Recreational User
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater Seeps	Sediment	Seep Sediment Floodplain Area 1A	Arsenic	5.E-07	--	6.E-08	--	5.E-07	skin	1.E-02	--	1.E-03	1.E-02
			Chemical Total	5.E-07	--	6.E-08	--	5.E-07		1E-02	--	1E-03	1.E-02
		Exposure Point Total						5.E-07					1.E-02
	Exposure Medium Total							5.E-07					1.E-02
Groundwater Seep Sediment Total								5.E-07					1.E-02
Groundwater Seeps	Surface Water	Seep Surface Water Floodplain Area 1A	Manganese	NA	--	NA	--	0.E+00	CNS	9.E-04	--	5.E-03	6.E-03
			Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		9E-04	--	5E-03	6.E-03
		Exposure Point Total						0.E+00					6.E-03
	Exposure Medium Total							0.E+00					6.E-03
Groundwater Seep Surface Water Total								0.E+00					6.E-03
Receptor Total							Receptor Risk Total	1.E-05				Receptor HI Total	8.E-02

Total Immune HI Across All Media =	0.E+00
Total Body Weight HI Across All Media =	6.E-05
Total Skin HI Across All Media =	3.E-02
Total Kidney HI Across All Media =	4.E-02
Total Liver HI Across All Media =	0.E+00
Total CNS HI Across All Media =	1.E-02
Total Development HI Across All Media =	0.E+00
Total Blood HI Across All Media =	4.E-04

Table 9.6.CTE

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor Population: Village Park Recreational User
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Sediment	Sediment	DePue Lake Sediment Sediment Area 1A (Wading Scenario)	Benzo(a)anthracene	2.E-07	--	1.E-10	--	2.E-07	NA	NA	--	NA	0.E+00
			Benzo(a)pyrene	2.E-06	--	1.E-09	--	2.E-06	NA	NA	--	NA	0.E+00
			Benzo(b)fluoranthene	1.E-07	--	1.E-10	--	1.E-07	NA	NA	--	NA	0.E+00
			Benzo(g,h,i)perylene	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Benzo(k)fluoranthene	1.E-08	--	1.E-11	--	1.E-08	NA	NA	--	NA	0.E+00
			Chrysene	2.E-09	--	1.E-12	--	2.E-09	NA	NA	--	NA	0.E+00
			Dibenz(a,h)anthracene	3.E-07	--	2.E-10	--	3.E-07	NA	NA	--	NA	0.E+00
			Indeno(1,2,3-cd)pyrene	8.E-08	--	6.E-11	--	8.E-08	NA	NA	--	NA	0.E+00
			Naphthalene	NA	--	NA	--	0.E+00	body weight	1.E-05	--	1.E-06	1.E-05
			Arsenic	1.E-07	--	7.E-09	--	1.E-07	skin	3.E-03	--	2.E-04	4.E-03
			Barium	NA	--	NA	--	0.E+00	kidney	2.E-05	--	NA	2.E-05
			Cadmium	NA	--	NA	--	0.E+00	kidney	8.E-03	--	3.E-04	9.E-03
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	2.E-06	--	8.E-09	--	2.E-06		1E-02	--	5E-04	1.E-02
		Exposure Point Total						2.E-06					1.E-02
	Exposure Medium Total							2.E-06					1.E-02
Sediment Total								2.E-06					1.E-02
Surface Water	Surface Water	DePue Lake Surface Water Eastern Portion of Lake (Wading Scenario)	Cadmium	NA	--	NA	--	0.E+00	kidney	2.E-04	--	2.E-03	2.E-03
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	4.E-04	--	2.E-03	3.E-03
			Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chloride	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Nitrate as N	NA	--	NA	--	0.E+00	blood	2.E-04	--	NA	2.E-04
			Phosphorus	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		8E-04	--	4E-03	5.E-03
		Exposure Point Total						0.E+00					5.E-03
	Exposure Medium Total							0.E+00					5.E-03
Surface Water Total								0.E+00					5.E-03

Table 9.6.CTE

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor Population: Village Park Recreational User
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater Seeps	Sediment	Seep Sediment Floodplain Area 1A	Arsenic	1.E-07	--	6.E-09	--	1.E-07	skin	3.E-03	--	1.E-04	3.E-03
			Chemical Total	1.E-07	--	6.E-09	--	1.E-07		3E-03	--	1E-04	3.E-03
		Exposure Point Total						1.E-07					3.E-03
	Exposure Medium Total							1.E-07					3.E-03
Groundwater Seep Sediment Total								1.E-07					3.E-03
Groundwater Seeps	Surface Water	Seep Surface Water Floodplain Area 1A	Manganese	NA	--	NA	--	0.E+00	CNS	4.E-04	--	3.E-03	3.E-03
			Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		4E-04	--	3E-03	3.E-03
		Exposure Point Total						0.E+00					3.E-03
	Exposure Medium Total							0.E+00					3.E-03
Groundwater Seep Surface Water Total								0.E+00					3.E-03
Receptor Total							Receptor Risk Total	2.E-06				Receptor HI Total	2.E-02

Total Immune HI Across All Media =	0.E+00
Total Body Weight HI Across All Media =	1.E-05
Total Skin HI Across All Media =	7.E-03
Total Kidney HI Across All Media =	1.E-02
Total Liver HI Across All Media =	0.E+00
Total CNS HI Across All Media =	6.E-03
Total Development HI Across All Media =	0.E+00
Total Blood HI Across All Media =	2.E-04

Table 9.6A.RME

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor Population: Village Park Recreational User
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Sediment	Sediment	DePue Lake Sediment Sediment Area 1A (Swimming Scenario)	Benzo(a)anthracene	7.E-07	--	6.E-07	--	1.E-06	NA	NA	--	NA	0.E+00
			Benzo(a)pyrene	6.E-06	--	5.E-06	--	1.E-05	NA	NA	--	NA	0.E+00
			Benzo(b)fluoranthene	5.E-07	--	4.E-07	--	1.E-06	NA	NA	--	NA	0.E+00
			Benzo(g,h,i)perylene	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Benzo(k)fluoranthene	6.E-08	--	5.E-08	--	1.E-07	NA	NA	--	NA	0.E+00
			Chrysene	6.E-09	--	6.E-09	--	1.E-08	NA	NA	--	NA	0.E+00
			Dibenz(a,h)anthracene	1.E-06	--	9.E-07	--	2.E-06	NA	NA	--	NA	0.E+00
			Indeno(1,2,3-cd)pyrene	3.E-07	--	3.E-07	--	6.E-07	NA	NA	--	NA	0.E+00
			Naphthalene	NA	--	NA	--	0.E+00	body weight	4.E-05	--	4.E-05	8.E-05
			Arsenic	5.E-07	--	2.E-07	--	7.E-07	skin	1.E-02	--	5.E-03	2.E-02
			Barium	NA	--	NA	--	0.E+00	kidney	9.E-05	--	NA	9.E-05
			Cadmium	NA	--	NA	--	0.E+00	kidney	3.E-02	--	9.E-03	4.E-02
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	9.E-06	--	8.E-06	--	2.E-05		5E-02	--	1E-02	6.E-02
		Exposure Point Total						2.E-05					6.E-02
	Exposure Medium Total							2.E-05					6.E-02
Sediment Total								2.E-05					6.E-02
Surface Water	Surface Water	DePue Lake Surface Water Eastern Portion of Lake (Swimming Scenario)	Cadmium	NA	--	NA	--	0.E+00	kidney	4.E-04	--	9.E-03	9.E-03
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	8.E-04	--	1.E-02	1.E-02
			Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chloride	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Nitrate as N	NA	--	NA	--	0.E+00	blood	4.E-04	--	NA	4.E-04
			Phosphorus	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		2E-03	--	2E-02	2.E-02
		Exposure Point Total						0.E+00					2.E-02
	Exposure Medium Total							0.E+00					2.E-02
Surface Water Total								0.E+00					2.E-02

Table 9.6A.RME

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor Population: Village Park Recreational User
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater Seeps	Sediment	Seep Sediment Floodplain Area 1A	Arsenic	5.E-07	--	6.E-08	--	5.E-07	skin	1.E-02	--	1.E-03	1.E-02
			Chemical Total	5.E-07	--	6.E-08	--	5.E-07		1E-02	--	1E-03	1.E-02
		Exposure Point Total						5.E-07					1.E-02
	Exposure Medium Total							5.E-07					1.E-02
Groundwater Seep Sediment Total								5.E-07					1.E-02
Groundwater Seeps	Surface Water	Seep Surface Water Floodplain Area 1A	Manganese	NA	--	NA	--	0.E+00	CNS	9.E-04	--	5.E-03	6.E-03
			Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		9E-04	--	5E-03	6.E-03
		Exposure Point Total						0.E+00					6.E-03
	Exposure Medium Total							0.E+00					6.E-03
Groundwater Seep Surface Water Total								0.E+00					6.E-03
Receptor Total			Receptor Risk Total					2.E-05		Receptor HI Total			1.E-01

Total Immune HI Across All Media =	0.E+00
Total Body Weight HI Across All Media =	8.E-05
Total Skin HI Across All Media =	3.E-02
Total Kidney HI Across All Media =	5.E-02
Total Liver HI Across All Media =	0.E+00
Total CNS HI Across All Media =	2.E-02
Total Development HI Across All Media =	0.E+00
Total Blood HI Across All Media =	4.E-04

Table 9.6A.CTE

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor Population: Village Park Recreational User
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Sediment	Sediment	DePue Lake Sediment Sediment Area 1A (Swimming Scenario)	Benzo(a)anthracene	2.E-07	--	6.E-08	--	2.E-07	NA	NA	--	NA	0.E+00
			Benzo(a)pyrene	2.E-06	--	5.E-07	--	2.E-06	NA	NA	--	NA	0.E+00
			Benzo(b)fluoranthene	1.E-07	--	4.E-08	--	2.E-07	NA	NA	--	NA	0.E+00
			Benzo(g,h,i)perylene	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Benzo(k)fluoranthene	1.E-08	--	5.E-09	--	2.E-08	NA	NA	--	NA	0.E+00
			Chrysene	2.E-09	--	6.E-10	--	2.E-09	NA	NA	--	NA	0.E+00
			Dibenz(a,h)anthracene	3.E-07	--	9.E-08	--	3.E-07	NA	NA	--	NA	0.E+00
			Indeno(1,2,3-cd)pyrene	8.E-08	--	3.E-08	--	1.E-07	NA	NA	--	NA	0.E+00
			Naphthalene	NA	--	NA	--	0.E+00	body weight	1.E-05	--	4.E-06	1.E-05
			Arsenic	1.E-07	--	2.E-08	--	2.E-07	skin	3.E-03	--	5.E-04	4.E-03
			Barium	NA	--	NA	--	0.E+00	kidney	2.E-05	--	NA	2.E-05
			Cadmium	NA	--	NA	--	0.E+00	kidney	8.E-03	--	9.E-04	9.E-03
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	2.E-06	--	8.E-07	--	3.E-06		1E-02	--	1E-03	1.E-02
		Exposure Point Total						3.E-06					1.E-02
	Exposure Medium Total							3.E-06					1.E-02
Sediment Total								3.E-06					1.E-02
Surface Water	Surface Water	DePue Lake Surface Water Eastern Portion of Lake (Swimming Scenario)	Cadmium	NA	--	NA	--	0.E+00	kidney	2.E-04	--	5.E-03	5.E-03
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	4.E-04	--	7.E-03	7.E-03
			Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chloride	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Nitrate as N	NA	--	NA	--	0.E+00	blood	2.E-04	--	NA	2.E-04
			Phosphorus	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		8E-04	--	1E-02	1.E-02
		Exposure Point Total						0.E+00					1.E-02
	Exposure Medium Total							0.E+00					1.E-02
Surface Water Total								0.E+00					1.E-02

Table 9.6A.CTE

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor Population: Village Park Recreational User
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater Seeps	Sediment	Seep Sediment Floodplain Area 1A	Arsenic	1.E-07	--	6.E-09	--	1.E-07	skin	3.E-03	--	1.E-04	3.E-03
			Chemical Total	1.E-07	--	6.E-09	--	1.E-07		3E-03	--	1E-04	3.E-03
		Exposure Point Total						1.E-07					3.E-03
	Exposure Medium Total							1.E-07					3.E-03
Groundwater Seep Sediment Total								1.E-07					3.E-03
Groundwater Seeps	Surface Water	Seep Surface Water Floodplain Area 1A	Manganese	NA	--	NA	--	0.E+00	CNS	4.E-04	--	3.E-03	3.E-03
			Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		4E-04	--	3E-03	3.E-03
		Exposure Point Total						0.E+00					3.E-03
	Exposure Medium Total							0.E+00					3.E-03
Groundwater Seep Surface Water Total								0.E+00					3.E-03
Receptor Total							Receptor Risk Total	3.E-06				Receptor HI Total	3.E-02

Total Immune HI Across All Media =	0.E+00
Total Body Weight HI Across All Media =	1.E-05
Total Skin HI Across All Media =	7.E-03
Total Kidney HI Across All Media =	1.E-02
Total Liver HI Across All Media =	0.E+00
Total CNS HI Across All Media =	1.E-02
Total Development HI Across All Media =	0.E+00
Total Blood HI Across All Media =	2.E-04

Table 9.6B.RME

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor Population: Village Park Recreational User
Receptor Age: Adult + Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Sediment	Sediment	DePue Lake Sediment Sediment Area 1A (Wading Scenario)	Benzo(a)anthracene	8.E-07	--	4.E-07	--	1.E-06	--	--	--	--	--
			Benzo(a)pyrene	7.E-06	--	3.E-06	--	1.E-05	--	--	--	--	--
			Benzo(b)fluoranthene	6.E-07	--	3.E-07	--	9.E-07	--	--	--	--	--
			Benzo(g,h,i)perylene	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Benzo(k)fluoranthene	6.E-08	--	3.E-08	--	9.E-08	--	--	--	--	--
			Chrysene	7.E-09	--	3.E-09	--	1.E-08	--	--	--	--	--
			Dibenz(a,h)anthracene	1.E-06	--	5.E-07	--	2.E-06	--	--	--	--	--
			Indeno(1,2,3-cd)pyrene	4.E-07	--	2.E-07	--	5.E-07	--	--	--	--	--
			Naphthalene	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Arsenic	8.E-07	--	2.E-07	--	1.E-06	--	--	--	--	--
			Barium	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Cadmium	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Lead	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Chemical Total	1.E-05	--	5.E-06	--	2.E-05	--	--	--	--	--
		Exposure Point Total						2.E-05					--
	Exposure Medium Total							2.E-05					--
Sediment Total								2.E-05					--
Surface Water	Surface Water	DePue Lake Surface Water Eastern Portion of Lake (Wading Scenario)	Cadmium	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Lead	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Manganese	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Ammonia	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Chloride	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Nitrate as N	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Phosphorus	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
		Exposure Point Total						0.E+00					--
	Exposure Medium Total							0.E+00					--
Surface Water Total								0.E+00					--

Table 9.6B.RME

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor Population: Village Park Recreational User
Receptor Age: Adult + Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater Seeps	Sediment	Seep Sediment	Arsenic	6.E-07	--	2.E-07	--	8.E-07	--	--	--	--	--
			Chemical Total	6.E-07	--	2.E-07	--	8.E-07	--	--	--	--	--
		Exposure Point Total						8.E-07					--
	Exposure Medium Total							8.E-07					--
Groundwater Seep Sediment Total								8.E-07					--
Groundwater Seeps	Surface Water	Seep Surface Water Floodplain Area 1A	Manganese	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Ammonia	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
		Exposure Point Total						0.E+00					--
	Exposure Medium Total							0.E+00					--
Groundwater Seep Surface Water Total								0.E+00					--
Receptor Total							Receptor Risk Total	2.E-05					--

-- = Non-cancer hazards are evaluated separately for adult and child.

Table 9.6B.CTE

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor Population: Village Park Recreational User
Receptor Age: Adult + Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Sediment	Sediment	DePue Lake Sediment Sediment Area 1A (Wading Scenario)	Benzo(a)anthracene	2.E-07	--	9E-09	--	2.E-07	--	--	--	--	--
			Benzo(a)pyrene	2.E-06	--	7E-08	--	2.E-06	--	--	--	--	--
			Benzo(b)fluoranthene	1.E-07	--	6E-09	--	1.E-07	--	--	--	--	--
			Benzo(g,h,i)perylene	0.E+00	--	0E+00	--	0.E+00	--	--	--	--	--
			Benzo(k)fluoranthene	1.E-08	--	6E-10	--	2.E-08	--	--	--	--	--
			Chrysene	2.E-09	--	7E-11	--	2.E-09	--	--	--	--	--
			Dibenz(a,h)anthracene	3.E-07	--	1E-08	--	3.E-07	--	--	--	--	--
			Indeno(1,2,3-cd)pyrene	8.E-08	--	4E-09	--	9.E-08	--	--	--	--	--
			Naphthalene	0.E+00	--	0E+00	--	0.E+00	--	--	--	--	--
			Arsenic	2.E-07	--	1E-08	--	2.E-07	--	--	--	--	--
			Barium	0.E+00	--	0E+00	--	0.E+00	--	--	--	--	--
			Cadmium	0.E+00	--	0E+00	--	0.E+00	--	--	--	--	--
			Lead	0.E+00	--	0E+00	--	0.E+00	--	--	--	--	--
			Chemical Total	3.E-06	--	1E-07	--	3.E-06	--	--	--	--	--
		Exposure Point Total						3.E-06					--
	Exposure Medium Total							3.E-06					--
Sediment Total								3.E-06					--
Surface Water	Surface Water	DePue Lake Surface Water Eastern Portion of Lake (Wading Scenario)	Cadmium	0.E+00	--	0E+00	--	0.E+00	--	--	--	--	--
			Lead	0.E+00	--	0E+00	--	0.E+00	--	--	--	--	--
			Manganese	0.E+00	--	0E+00	--	0.E+00	--	--	--	--	--
			Ammonia	0.E+00	--	0E+00	--	0.E+00	--	--	--	--	--
			Chloride	0.E+00	--	0E+00	--	0.E+00	--	--	--	--	--
			Nitrate as N	0.E+00	--	0E+00	--	0.E+00	--	--	--	--	--
			Phosphorus	0.E+00	--	0E+00	--	0.E+00	--	--	--	--	--
			Chemical Total	0.E+00	--	0E+00	--	0.E+00	--	--	--	--	--
		Exposure Point Total						0.E+00					--
	Exposure Medium Total							0.E+00					--
Surface Water Total								0.E+00					--

Table 9.6B.CTE

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor Population: Village Park Recreational User
Receptor Age: Adult + Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater Seeps	Sediment	Seep Sediment Floodplain Area 1A	Arsenic	1.E-07	--	1E-08	--	1.E-07	--	--	--	--	--
			Chemical Total	1.E-07	--	1E-08	--	1.E-07	--	--	--	--	--
		Exposure Point Total						1.E-07					--
	Exposure Medium Total							1.E-07					--
Groundwater Seep Sediment Total								1.E-07					--
Groundwater Seeps	Surface Water	Seep Surface Water Floodplain Area 1A	Manganese	0.E+00	--	0E+00	--	0.E+00	--	--	--	--	--
			Ammonia	0.E+00	--	0E+00	--	0.E+00	--	--	--	--	--
			Chemical Total	0.E+00	--	0E+00	--	0.E+00	--	--	--	--	--
		Exposure Point Total						0.E+00					--
	Exposure Medium Total							0.E+00					--
Groundwater Seep Surface Water Total								0.E+00					--
Receptor Total							Receptor Risk Total	3.E-06					--

-- = Non-cancer hazards are evaluated separately for adult and child.

Table 9.6C.RME

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor Population: Village Park Recreational User
Receptor Age: Adult + Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Sediment	Sediment	DePue Lake Sediment Sediment Area 1A (Swimming Scenario)	Benzo(a)anthracene	8.E-07	--	1.E-06	--	2.E-06	--	--	--	--	--
			Benzo(a)pyrene	7.E-06	--	1.E-05	--	2.E-05	--	--	--	--	--
			Benzo(b)fluoranthene	6.E-07	--	8.E-07	--	1.E-06	--	--	--	--	--
			Benzo(g,h,i)perylene	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Benzo(k)fluoranthene	6.E-08	--	8.E-08	--	1.E-07	--	--	--	--	--
			Chrysene	7.E-09	--	1.E-08	--	2.E-08	--	--	--	--	--
			Dibenz(a,h)anthracene	1.E-06	--	2.E-06	--	3.E-06	--	--	--	--	--
			Indeno(1,2,3-cd)pyrene	4.E-07	--	5.E-07	--	8.E-07	--	--	--	--	--
			Naphthalene	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Arsenic	8.E-07	--	6.E-07	--	1.E-06	--	--	--	--	--
			Barium	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Cadmium	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Lead	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Chemical Total	1.E-05	--	1.E-05	--	3.E-05	--	--	--	--	--
		Exposure Point Total						3.E-05					--
	Exposure Medium Total							3.E-05					--
Sediment Total								3.E-05					--
Surface Water	Surface Water	DePue Lake Surface Water Eastern Portion of Lake (Swimming Scenario)	Cadmium	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Lead	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Manganese	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Ammonia	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Chloride	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Nitrate as N	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Phosphorus	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
		Exposure Point Total						0.E+00					--
	Exposure Medium Total							0.E+00					--
Surface Water Total								0.E+00					--

Table 9.6C.RME

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor Population: Village Park Recreational User
Receptor Age: Adult + Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater Seeps	Sediment	Seep Sediment	Arsenic	6.E-07	--	2.E-07	--	8.E-07	--	--	--	--	--
			Chemical Total	6.E-07	--	2.E-07	--	8.E-07	--	--	--	--	--
		Exposure Point Total						8.E-07					--
	Exposure Medium Total							8.E-07					--
Groundwater Seep Sediment Total								8.E-07					--
Groundwater Seeps	Surface Water	Seep Surface Water Floodplain Area 1A	Manganese	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Ammonia	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
		Exposure Point Total						0.E+00					--
	Exposure Medium Total							0.E+00					--
Groundwater Seep Surface Water Total								0.E+00					--
Receptor Total							Receptor Risk Total	3.E-05					--

-- = Non-cancer hazards are evaluated separately for adult and child.

Table 9.6C.CTE

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor Population: Village Park Recreational User
Receptor Age: Adult + Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Sediment	Sediment	DePue Lake Sediment Sediment Area 1A (Swimming Scenario)	Benzo(a)anthracene	2.E-07	--	9E-08	--	3.E-07	--	--	--	--	--
			Benzo(a)pyrene	2.E-06	--	8E-07	--	2.E-06	--	--	--	--	--
			Benzo(b)fluoranthene	1.E-07	--	6E-08	--	2.E-07	--	--	--	--	--
			Benzo(g,h,i)perylene	0.E+00	--	0E+00	--	0.E+00	--	--	--	--	--
			Benzo(k)fluoranthene	1.E-08	--	7E-09	--	2.E-08	--	--	--	--	--
			Chrysene	2.E-09	--	8E-10	--	3.E-09	--	--	--	--	--
			Dibenz(a,h)anthracene	3.E-07	--	1E-07	--	4.E-07	--	--	--	--	--
			Indeno(1,2,3-cd)pyrene	8.E-08	--	4E-08	--	1.E-07	--	--	--	--	--
			Naphthalene	0.E+00	--	0E+00	--	0.E+00	--	--	--	--	--
			Arsenic	2.E-07	--	2E-08	--	2.E-07	--	--	--	--	--
			Barium	0.E+00	--	0E+00	--	0.E+00	--	--	--	--	--
			Cadmium	0.E+00	--	0E+00	--	0.E+00	--	--	--	--	--
			Lead	0.E+00	--	0E+00	--	0.E+00	--	--	--	--	--
			Chemical Total	3.E-06	--	1E-06	--	4.E-06	--	--	--	--	--
		Exposure Point Total						4.E-06					--
	Exposure Medium Total							4.E-06					--
Sediment Total								4.E-06					--
Surface Water	Surface Water	DePue Lake Surface Water Eastern Portion of Lake (Swimming Scenario)	Cadmium	0.E+00	--	0E+00	--	0.E+00	--	--	--	--	--
			Lead	0.E+00	--	0E+00	--	0.E+00	--	--	--	--	--
			Manganese	0.E+00	--	0E+00	--	0.E+00	--	--	--	--	--
			Ammonia	0.E+00	--	0E+00	--	0.E+00	--	--	--	--	--
			Chloride	0.E+00	--	0E+00	--	0.E+00	--	--	--	--	--
			Nitrate as N	0.E+00	--	0E+00	--	0.E+00	--	--	--	--	--
			Phosphorus	0.E+00	--	0E+00	--	0.E+00	--	--	--	--	--
			Chemical Total	0.E+00	--	0E+00	--	0.E+00	--	--	--	--	--
		Exposure Point Total						0.E+00					--
	Exposure Medium Total							0.E+00					--
Surface Water Total								0.E+00					--

Table 9.6C.CTE

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor Population: Village Park Recreational User
Receptor Age: Adult + Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater Seeps	Sediment	Seep Sediment Floodplain Area 1A	Arsenic	1.E-07	--	1E-08	--	1.E-07	--	--	--	--	--
			Chemical Total	1.E-07	--	1E-08	--	1.E-07	--	--	--	--	--
		Exposure Point Total						1.E-07					--
	Exposure Medium Total							1.E-07					--
Groundwater Seep Sediment Total								1.E-07					--
Groundwater Seeps	Surface Water	Seep Surface Water Floodplain Area 1A	Manganese	0.E+00	--	0E+00	--	0.E+00	--	--	--	--	--
			Ammonia	0.E+00	--	0E+00	--	0.E+00	--	--	--	--	--
			Chemical Total	0.E+00	--	0E+00	--	0.E+00	--	--	--	--	--
		Exposure Point Total						0.E+00					--
	Exposure Medium Total							0.E+00					--
Groundwater Seep Surface Water Total								0.E+00					--
Receptor Total							Receptor Risk Total	4.E-06					--

-- = Non-cancer hazards are evaluated separately for adult and child.

Table 9.7.RME
Summary of Receptor Risks and Hazards for COPCs
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor Population: Recreational Boater
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Sediment	Sediment	DePue Lake Surface Sediment Lake-wide	Benzo(a)anthracene	6.E-09	--	9.E-09	--	1.E-08	NA	NA	--	NA	0.E+00
			Benzo(a)pyrene	5.E-07	--	7.E-07	--	1.E-06	NA	NA	--	NA	0.E+00
			Benzo(b)fluoranthene	7.E-09	--	1.E-08	--	2.E-08	NA	NA	--	NA	0.E+00
			Benzo(g,h,i)perylene	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Benzo(k)fluoranthene	4.E-09	--	7.E-09	--	1.E-08	NA	NA	--	NA	0.E+00
			Chrysene	5.E-10	--	8.E-10	--	1.E-09	NA	NA	--	NA	0.E+00
			Dibenz(a,h)anthracene	8.E-08	--	1.E-07	--	2.E-07	NA	NA	--	NA	0.E+00
			Indeno(1,2,3-cd)pyrene	3.E-08	--	4.E-08	--	6.E-08	NA	NA	--	NA	0.E+00
			Naphthalene	NA	--	NA	--	0.E+00	body weight	1.E-06	--	6.E-06	8.E-06
			Gamma-BHC (Lindane)	7.E-07	--	3.E-07	--	9.E-07	liver, kidney	2.E-03	--	3.E-03	5.E-03
			Arsenic	3.E-07	--	2.E-07	--	5.E-07	skin	2.E-03	--	1.E-03	3.E-03
			Cadmium	NA	--	NA	--	0.E+00	kidney	5.E-03	--	2.E-03	7.E-03
			Cobalt	NA	--	NA	--	0.E+00	NA	3.E-03	--	NA	3.E-03
			Copper	NA	--	NA	--	0.E+00	NA	9.E-04	--	NA	9.E-04
			Iron	NA	--	NA	--	0.E+00	NA	2.E-03	--	NA	2.E-03
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	3.E-04	--	NA	3.E-04
			Mercury	NA	--	NA	--	0.E+00	development	1.E-03	--	NA	1.E-03
			Zinc	NA	--	NA	--	0.E+00	blood	1.E-03	--	NA	1.E-03
			Chemical Total	2.E-06	--	1.E-06	--	3.E-06		2E-02	--	6E-03	2.E-02
		Exposure Point Total						3.E-06					2.E-02
	Exposure Medium Total							3.E-06					2.E-02
Sediment Total								3.E-06					2.E-02
Surface Water	Surface Water	DePue Lake Surface Water Lake-wide	Cadmium	NA	--	NA	--	0.E+00	kidney	4.E-05	--	8.E-04	8.E-04
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	1.E-04	--	1.E-03	2.E-03
			Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chloride	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Nitrate as N	NA	--	NA	--	0.E+00	blood	2.E-05	--	NA	2.E-05
			Phosphorus	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Sulfate	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		2E-04	--	2E-03	2.E-03
		Exposure Point Total						0.E+00					2.E-03
	Exposure Medium Total							0.E+00					2.E-03
Surface Water Total								0.E+00					2.E-03

Table 9.7.RME

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor Population: Recreational Boater
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater Seeps	Sediment	Seep Sediment	Arsenic	2.E-07	--	9.E-08	--	2.E-07	skin	1.E-03	--	6.E-04	2.E-03
		Floodplain Area 1A	Chemical Total	2.E-07	--	8.6E-08	--	2.E-07		1E-03	--	6E-04	2.E-03
		Exposure Point Total						2.E-07					2.E-03
	Exposure Medium Total							2.E-07					2.E-03
Groundwater Seep Sediment Total								2.E-07					2.E-03
Groundwater Seeps	Surface Water	Seep Surface Water	Manganese	NA	--	NA	--	0.E+00	CNS	9.E-05	--	1.E-03	1.E-03
		Floodplain Area 1A	Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0.0E+00	--	0.E+00		9E-05	--	1E-03	1.E-03
		Exposure Point Total						0.E+00					1.E-03
	Exposure Medium Total							0.E+00					1.E-03
Groundwater Seep Surface Water Total								0.E+00					1.E-03
Receptor Total							Receptor Risk Total	3.E-06					3.E-02

Total Immune HI Across All Media =	0.E+00
Total Body Weight HI Across All Media =	8.E-06
Total Skin HI Across All Media =	4.E-03
Total Kidney HI Across All Media =	1.E-02
Total Liver HI Across All Media =	5.E-03
Total CNS HI Across All Media =	3.E-03
Total Development HI Across All Media =	1.E-03
Total Blood HI Across All Media =	1.E-03

Table 9.7.CTE

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor Population: Recreational Boater
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Sediment	Sediment	DePue Lake Surface Sediment Lake-wide	Benzo(a)anthracene	8.E-10	--	5.E-10	--	1.E-09	NA	NA	--	NA	0.E+00
			Benzo(a)pyrene	7.E-08	--	4.E-08	--	1.E-07	NA	NA	--	NA	0.E+00
			Benzo(b)fluoranthene	1.E-09	--	6.E-10	--	2.E-09	NA	NA	--	NA	0.E+00
			Benzo(g,h,i)perylene	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Benzo(k)fluoranthene	6.E-10	--	4.E-10	--	1.E-09	NA	NA	--	NA	0.E+00
			Chrysene	7.E-11	--	4.E-11	--	1.E-10	NA	NA	--	NA	0.E+00
			Dibenz(a,h)anthracene	1.E-08	--	7.E-09	--	2.E-08	NA	NA	--	NA	0.E+00
			Indeno(1,2,3-cd)pyrene	4.E-09	--	2.E-09	--	6.E-09	NA	NA	--	NA	0.E+00
			Naphthalene	NA	--	NA	--	0.E+00	body weight	1.E-06	--	8.E-08	1.E-06
			Gamma-BHC (Lindane)	6.E-08	--	1.E-08	--	7.E-08	liver, kidney	1.E-03	--	3.E-05	1.E-03
			Arsenic	3.E-08	--	6.E-09	--	3.E-08	skin	5.E-04	--	1.E-04	6.E-04
			Cadmium	NA	--	NA	--	0.E+00	kidney	1.E-03	--	2.E-04	2.E-03
			Cobalt	NA	--	NA	--	0.E+00	NA	8.E-04	--	NA	8.E-04
			Copper	NA	--	NA	--	0.E+00	NA	2.E-04	--	NA	2.E-04
			Iron	NA	--	NA	--	0.E+00	NA	5.E-04	--	NA	5.E-04
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	8.E-05	--	NA	8.E-05
			Mercury	NA	--	NA	--	0.E+00	development	3.E-04	--	NA	3.E-04
			Zinc	NA	--	NA	--	0.E+00	blood	3.E-04	--	NA	3.E-04
			Chemical Total	2.E-07	--	7.E-08	--	2.E-07		5E-03	--	4E-04	6.E-03
		Exposure Point Total						2.E-07					6.E-03
	Exposure Medium Total							2.E-07					6.E-03
Sediment Total								2.E-07					6.E-03
Surface Water	Surface Water	DePue Lake Surface Water Lake-wide	Cadmium	NA	--	NA	--	0.E+00	kidney	2.E-05	--	4.E-04	4.E-04
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	5.E-05	--	7.E-04	8.E-04
			Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chloride	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Nitrate as N	NA	--	NA	--	0.E+00	blood	1.E-05	--	NA	1.E-05
			Phosphorus	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Sulfate	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		8E-05	--	1E-03	1.E-03
		Exposure Point Total						0.E+00					1.E-03
	Exposure Medium Total							0.E+00					1.E-03
Surface Water Total								0.E+00					1.E-03

Table 9.7.CTE

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor Population: Recreational Boater
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater Seeps	Sediment	Seep Sediment	Arsenic	1.E-08	--	3.E-09	--	2.E-08	skin	2.E-04	--	6.E-05	3.E-04
		Floodplain Area 1A	Chemical Total	1.E-08	--	3E-09	--	2.E-08		2E-04	--	6E-05	3.E-04
		Exposure Point Total						2.E-08					3.E-04
	Exposure Medium Total							2.E-08					3.E-04
Groundwater Seep Sediment Total								2.E-08					3.E-04
Groundwater Seeps	Surface Water	Seep Surface Water	Manganese	NA	--	NA	--	0.E+00	CNS	4.E-05	--	6.E-04	6.E-04
		Floodplain Area 1A	Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0E+00	--	0.E+00		4E-05	--	6E-04	6.E-04
		Exposure Point Total						0.E+00					6.E-04
	Exposure Medium Total							0.E+00					6.E-04
Groundwater Seep Surface Water Total								0.E+00					6.E-04
Receptor Total							Receptor Risk Total	3.E-07					8.E-03

Total Immune HI Across All Media =	0.E+00
Total Body Weight HI Across All Media =	1.E-06
Total Skin HI Across All Media =	9.E-04
Total Kidney HI Across All Media =	3.E-03
Total Liver HI Across All Media =	1.E-03
Total CNS HI Across All Media =	1.E-03
Total Development HI Across All Media =	3.E-04
Total Blood HI Across All Media =	3.E-04

Table 9.8.RME
Summary of Receptor Risks and Hazards for COPCs
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor Population: Recreational Boater
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Sediment	Sediment	DePue Lake Surface Sediment Lake-wide	Benzo(a)anthracene	4.E-08	--	1.E-08	--	5.E-08	NA	NA	--	NA	0.E+00
			Benzo(a)pyrene	4.E-06	--	1.E-06	--	5.E-06	NA	NA	--	NA	0.E+00
			Benzo(b)fluoranthene	5.E-08	--	2.E-08	--	7.E-08	NA	NA	--	NA	0.E+00
			Benzo(g,h,i)perylene	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Benzo(k)fluoranthene	3.E-08	--	1.E-08	--	4.E-08	NA	NA	--	NA	0.E+00
			Chrysene	4.E-09	--	1.E-09	--	5.E-09	NA	NA	--	NA	0.E+00
			Dibenz(a,h)anthracene	6.E-07	--	2.E-07	--	8.E-07	NA	NA	--	NA	0.E+00
			Indeno(1,2,3-cd)pyrene	2.E-07	--	6.E-08	--	2.E-07	NA	NA	--	NA	0.E+00
			Naphthalene	NA	--	NA	--	0.E+00	body weight	4.E-05	--	1.E-05	5.E-05
			Gamma-BHC (Lindane)	9.E-07	--	1.E-07	--	1.E-06	liver, kidney	5.E-02	--	5.E-03	6.E-02
			Arsenic	7.E-07	--	8.E-08	--	8.E-07	skin	2.E-02	--	2.E-03	2.E-02
			Cadmium	NA	--	NA	--	0.E+00	kidney	5.E-02	--	5.E-03	5.E-02
			Cobalt	NA	--	NA	--	0.E+00	NA	3.E-02	--	NA	3.E-02
			Copper	NA	--	NA	--	0.E+00	NA	9.E-03	--	NA	9.E-03
			Iron	NA	--	NA	--	0.E+00	NA	2.E-02	--	NA	2.E-02
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	3.E-03	--	NA	3.E-03
			Mercury	NA	--	NA	--	0.E+00	development	1.E-02	--	NA	1.E-02
			Zinc	NA	--	NA	--	0.E+00	blood	1.E-02	--	NA	1.E-02
			Chemical Total	6.E-06	--	2.E-06	--	8.E-06		2E-01	--	1E-02	2.E-01
		Exposure Point Total						8.E-06					2.E-01
	Exposure Medium Total							8.E-06					2.E-01
Sediment Total								8.E-06					2.E-01
Surface Water	Surface Water	DePue Lake Surface Water Lake-wide	Cadmium	NA	--	NA	--	0.E+00	kidney	2.E-04	--	2.E-03	2.E-03
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	5.E-04	--	3.E-03	3.E-03
			Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chloride	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Nitrate as N	NA	--	NA	--	0.E+00	blood	1.E-04	--	NA	1.E-04
			Phosphorus	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Sulfate	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		7E-04	--	4E-03	5.E-03
		Exposure Point Total						0.E+00					5.E-03
	Exposure Medium Total							0.E+00					5.E-03
Surface Water Total								0.E+00					5.E-03

Table 9.8.RME

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor Population: Recreational Boater
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater Seeps	Sediment	Seep Sediment Floodplain Area 1A	Arsenic	4.E-07	--	4.E-08	--	4.E-07	skin	9.E-03	--	1.E-03	1.E-02
			Chemical Total	4.E-07	--	4E-08	--	4.E-07		9E-03	--	1E-03	1.E-02
		Exposure Point Total						4.E-07					1.E-02
	Exposure Medium Total							4.E-07					1.E-02
Groundwater Seep Sediment Total								4.E-07					1.E-02
Groundwater Seeps	Surface Water	Seep Surface Water Floodplain Area 1A	Manganese	NA	--	NA	--	0.E+00	CNS	4.E-04	--	2.E-03	3.E-03
			Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0E+00	--	0.E+00		4E-04	--	2E-03	3.E-03
		Exposure Point Total						0.E+00					3.E-03
	Exposure Medium Total							0.E+00					3.E-03
Groundwater Seep Surface Water Total								0.E+00					3.E-03
Receptor Total							Receptor Risk Total	8.E-06					2.E-01

Total Immune HI Across All Media =	0.E+00
Total Body Weight HI Across All Media =	5.E-05
Total Skin HI Across All Media =	3.E-02
Total Kidney HI Across All Media =	1.E-01
Total Liver HI Across All Media =	6.E-02
Total CNS HI Across All Media =	9.E-03
Total Development HI Across All Media =	1.E-02
Total Blood HI Across All Media =	1.E-02

Table 9.8.CTE
Summary of Receptor Risks and Hazards for COPCs
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor Population: Recreational Boater
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Sediment	Sediment	DePue Lake Surface Sediment Lake-wide	Benzo(a)anthracene	1.E-08	--	1.E-09	--	1.E-08	NA	NA	--	NA	0.E+00
			Benzo(a)pyrene	9.E-07	--	8.E-08	--	1.E-06	NA	NA	--	NA	0.E+00
			Benzo(b)fluoranthene	1.E-08	--	1.E-09	--	1.E-08	NA	NA	--	NA	0.E+00
			Benzo(g,h,i)perylene	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Benzo(k)fluoranthene	8.E-09	--	7.E-10	--	9.E-09	NA	NA	--	NA	0.E+00
			Chrysene	9.E-10	--	9.E-11	--	1.E-09	NA	NA	--	NA	0.E+00
			Dibenz(a,h)anthracene	1.E-07	--	1.E-08	--	2.E-07	NA	NA	--	NA	0.E+00
			Indeno(1,2,3-cd)pyrene	5.E-08	--	4.E-09	--	5.E-08	NA	NA	--	NA	0.E+00
			Naphthalene	NA	--	NA	--	0.E+00	body weight	1.E-05	--	1.E-06	1.E-05
			Gamma-BHC (Lindane)	4.E-07	--	1.E-08	--	4.E-07	liver, kidney	1.E-02	--	5.E-04	1.E-02
			Arsenic	2.E-07	--	8.E-09	--	2.E-07	skin	4.E-03	--	2.E-04	5.E-03
			Cadmium	NA	--	NA	--	0.E+00	kidney	1.E-02	--	5.E-04	1.E-02
			Cobalt	NA	--	NA	--	0.E+00	NA	8.E-03	--	NA	8.E-03
			Copper	NA	--	NA	--	0.E+00	NA	2.E-03	--	NA	2.E-03
			Iron	NA	--	NA	--	0.E+00	NA	5.E-03	--	NA	5.E-03
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	7.E-04	--	NA	7.E-04
			Mercury	NA	--	NA	--	0.E+00	development	3.E-03	--	NA	3.E-03
			Zinc	NA	--	NA	--	0.E+00	blood	3.E-03	--	NA	3.E-03
			Chemical Total	2.E-06	--	1.E-07	--	2.E-06		5E-02	--	1E-03	5.E-02
		Exposure Point Total						2.E-06					5.E-02
	Exposure Medium Total							2.E-06					5.E-02
Sediment Total								2.E-06					5.E-02
Surface Water	Surface Water	DePue Lake Surface Water Lake-wide	Cadmium	NA	--	NA	--	0.E+00	kidney	8.E-05	--	8.E-04	9.E-04
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	2.E-04	--	1.E-03	2.E-03
			Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chloride	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Nitrate as N	NA	--	NA	--	0.E+00	blood	5.E-05	--	NA	5.E-05
			Phosphorus	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Sulfate	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		4E-04	--	2E-03	3.E-03
		Exposure Point Total						0.E+00					3.E-03
	Exposure Medium Total							0.E+00					3.E-03
Surface Water Total								0.E+00					3.E-03

Table 9.8.CTE

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor Population: Recreational Boater
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater Seeps	Sediment	Seep Sediment Floodplain Area 1A	Arsenic	9.E-08	--	4.E-09	--	9.E-08	skin	2.E-03	--	1.E-04	2.E-03
			Chemical Total	9.E-08	--	4E-09	--	9.E-08		2E-03	--	1E-04	2.E-03
		Exposure Point Total						9.E-08					2.E-03
	Exposure Medium Total							9.E-08					2.E-03
Groundwater Seep Sediment Total								9.E-08					2.E-03
Groundwater Seeps	Surface Water	Seep Surface Water Floodplain Area 1A	Manganese	NA	--	NA	--	0.E+00	CNS	2.E-04	--	1.E-03	1.E-03
			Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0E+00	--	0.E+00		2E-04	--	1E-03	1.E-03
		Exposure Point Total						0.E+00					1.E-03
	Exposure Medium Total							0.E+00					1.E-03
Groundwater Seep Surface Water Total								0.E+00					1.E-03
Receptor Total							Receptor Risk Total	2.E-06					6.E-02

Total Immune HI Across All Media =	0.E+00
Total Body Weight HI Across All Media =	1.E-05
Total Skin HI Across All Media =	7.E-03
Total Kidney HI Across All Media =	3.E-02
Total Liver HI Across All Media =	1.E-02
Total CNS HI Across All Media =	4.E-03
Total Development HI Across All Media =	3.E-03
Total Blood HI Across All Media =	3.E-03

Table 9.8A.RME

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor Population: Recreational Boater
Receptor Age: Adult + Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Sediment	Sediment	DePue Lake Surface Sediment Lake-wide	Benzo(a)anthracene	5.E-08	--	2.E-08	--	7.E-08	--	--	--	--	--
			Benzo(a)pyrene	4.E-06	--	2.E-06	--	6.E-06	--	--	--	--	--
			Benzo(b)fluoranthene	6.E-08	--	3.E-08	--	9.E-08	--	--	--	--	--
			Benzo(g,h,i)perylene	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Benzo(k)fluoranthene	4.E-08	--	2.E-08	--	5.E-08	--	--	--	--	--
			Chrysene	4.E-09	--	2.E-09	--	6.E-09	--	--	--	--	--
			Dibenz(a,h)anthracene	7.E-07	--	3.E-07	--	1.E-06	--	--	--	--	--
			Indeno(1,2,3-cd)pyrene	2.E-07	--	1.E-07	--	3.E-07	--	--	--	--	--
			Naphthalene	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Gamma-BHC (Lindane)	2.E-06	--	4.E-07	--	2.E-06					
			Arsenic	1.E-06	--	2.E-07	--	1.E-06	--	--	--	--	--
			Cadmium	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Cobalt	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Copper	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Iron	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Lead	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Manganese	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Mercury	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Zinc	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Chemical Total	8.E-06	--	3.E-06	--	1.E-05	--	--	--	--	--
		Exposure Point Total						1.E-05					--
	Exposure Medium Total							1.E-05					--
Sediment Total								1.E-05					--
Surface Water	Surface Water	DePue Lake Surface Water Lake-wide	Cadmium	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Lead	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Manganese	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Ammonia	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Chloride	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Nitrate as N	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Phosphorus	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Sulfate	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
		Exposure Point Total						0.E+00					--
	Exposure Medium Total							0.E+00					--
Surface Water Total								0.E+00					--

Table 9.8A.RME

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor Population: Recreational Boater
Receptor Age: Adult + Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater Seeps	Sediment	Seep Sediment Floodplain Area 1A	Arsenic	5.E-07	--	1.E-07	--	6.E-07	--	--	--	--	--
			Chemical Total	5.E-07	--	1E-07	--	6.E-07	--	--	--	--	--
		Exposure Point Total						6.E-07					--
	Exposure Medium Total							6.E-07					--
Groundwater Seep Sediment Total								6.E-07					--
Groundwater Seeps	Surface Water	Seep Surface Water Floodplain Area 1A	Manganese	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Ammonia	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Chemical Total	0.E+00	--	0E+00	--	0.E+00	--	--	--	--	--
		Exposure Point Total						0.E+00					--
	Exposure Medium Total							0.E+00					--
Groundwater Seep Surface Water Total								0.E+00					--
Receptor Total							Receptor Risk Total	1.E-05					--

-- = Non-cancer hazards are evaluated separately for adult and child.

Table 9.8A.CTE

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor Population: Recreational Boater
Receptor Age: Adult + Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Sediment	Sediment	DePue Lake Surface Sediment Lake-wide	Benzo(a)anthracene	1.E-08	--	1.E-09	--	1.E-08	--	--	--	--	--
			Benzo(a)pyrene	9.E-07	--	1.E-07	--	1.E-06	--	--	--	--	--
			Benzo(b)fluoranthene	1.E-08	--	2.E-09	--	2.E-08	--	--	--	--	--
			Benzo(g,h,i)perylene	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Benzo(k)fluoranthene	9.E-09	--	1.E-09	--	1.E-08	--	--	--	--	--
			Chrysene	1.E-09	--	1.E-10	--	1.E-09	--	--	--	--	--
			Dibenz(a,h)anthracene	2.E-07	--	2.E-08	--	2.E-07	--	--	--	--	--
			Indeno(1,2,3-cd)pyrene	5.E-08	--	6.E-09	--	6.E-08	--	--	--	--	--
			Naphthalene	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Gamma-BHC (Lindane)	4.E-07	--	3.E-08	--	5.E-07					
			Arsenic	2.E-07	--	1.E-08	--	2.E-07	--	--	--	--	--
			Cadmium	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Cobalt	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Copper	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Iron	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Lead	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Manganese	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Mercury	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Zinc	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Chemical Total	2.E-06	--	2.E-07	--	2.E-06	--	--	--	--	--
		Exposure Point Total						2.E-06					--
	Exposure Medium Total							2.E-06					--
Sediment Total								2.E-06					--
Surface Water	Surface Water	DePue Lake Surface Water Lake-wide	Cadmium	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Lead	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Manganese	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Ammonia	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Chloride	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Nitrate as N	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Phosphorus	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Sulfate	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
		Exposure Point Total						0.E+00					--
	Exposure Medium Total							0.E+00					--
Surface Water Total								0.E+00					--

Table 9.8A.CTE

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor Population: Recreational Boater
Receptor Age: Adult + Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater Seeps	Sediment	Seep Sediment Floodplain Area 1A	Arsenic	1.E-07	--	8.E-09	--	1.E-07	--	--	--	--	--
			Chemical Total	1.E-07	--	8.E-09	--	1.E-07	--	--	--	--	--
		Exposure Point Total						1.E-07					--
	Exposure Medium Total							1.E-07					--
Groundwater Seep Sediment Total								1.E-07					--
Groundwater Seeps	Surface Water	Seep Surface Water Floodplain Area 1A	Manganese	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Ammonia	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
		Exposure Point Total						0.E+00					--
	Exposure Medium Total							0.E+00					--
Groundwater Seep Surface Water Total								0.E+00					--
Receptor Total							Receptor Risk Total	2.E-06					--

-- = Non-cancer hazards are evaluated separately for adult and child.

Table 9.9.RME
Summary of Receptor Risks and Hazards for COPCs
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor Population: Angler (boat)
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Sediment	Sediment	DePue Lake Surface Sediment Lake-wide	Benzo(a)anthracene	1.E-08	--	2.E-08	--	3.E-08	NA	NA	--	NA	0.E+00
			Benzo(a)pyrene	1.E-06	--	1.E-06	--	2.E-06	NA	NA	--	NA	0.E+00
			Benzo(b)fluoranthene	1.E-08	--	2.E-08	--	4.E-08	NA	NA	--	NA	0.E+00
			Benzo(g,h,i)perylene	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Benzo(k)fluoranthene	9.E-09	--	1.E-08	--	2.E-08	NA	NA	--	NA	0.E+00
			Chrysene	1.E-09	--	1.E-09	--	2.E-09	NA	NA	--	NA	0.E+00
			Dibenz(a,h)anthracene	2.E-07	--	2.E-07	--	4.E-07	NA	NA	--	NA	0.E+00
			Indeno(1,2,3-cd)pyrene	5.E-08	--	7.E-08	--	1.E-07	NA	NA	--	NA	0.E+00
			Naphthalene	NA	--	NA	--	0.E+00	body weight	8.E-06	--	1.E-05	2.E-05
			Gamma-BHC (Lindane)	1.E-06	--	6.E-07	--	2.E-06	liver, kidney	1.E-02	--	5.E-03	2.E-02
			Arsenic	6.E-07	--	3.E-07	--	9.E-07	skin	4.E-03	--	2.E-03	6.E-03
			Cadmium	NA	--	NA	--	0.E+00	kidney	1.E-02	--	4.E-03	1.E-02
			Cobalt	NA	--	NA	--	0.E+00	NA	6.E-03	--	NA	6.E-03
			Copper	NA	--	NA	--	0.E+00	NA	2.E-03	--	NA	2.E-03
			Iron	NA	--	NA	--	0.E+00	NA	4.E-03	--	NA	4.E-03
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	6.E-04	--	NA	6.E-04
			Mercury	NA	--	NA	--	0.E+00	development	3.E-03	--	NA	3.E-03
			Zinc	NA	--	NA	--	0.E+00	blood	2.E-03	--	NA	2.E-03
			Chemical Total	3.E-06	--	3.E-06	--	6.E-06		4E-02	--	1E-02	5.E-02
		Exposure Point Total						6.E-06					5.E-02
	Exposure Medium Total							6.E-06					5.E-02
Sediment Total								6.E-06					5.E-02
Surface Water	Surface Water	DePue Lake Surface Water Lake-wide	Cadmium	NA	--	NA	--	0.E+00	kidney	7.E-05	--	1.E-03	2.E-03
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	2.E-04	--	3.E-03	3.E-03
			Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chloride	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Nitrate as N	NA	--	NA	--	0.E+00	blood	5.E-05	--	NA	5.E-05
			Phosphorus	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Sulfate	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		3E-04	--	4E-03	5.E-03
		Exposure Point Total						0.E+00					5.E-03
	Exposure Medium Total							0.E+00					5.E-03
Surface Water Total								0.E+00					5.E-03

Table 9.9.RME

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor Population: Angler (boat)
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater Seeps	Sediment	Seep Sediment	Arsenic	3.E-07	--	2.E-07	--	5.E-07	skin	2.E-03	--	1.E-03	3.E-03
		Floodplain Area 1A	Chemical Total	3.E-07	--	2E-07	--	5.E-07		2E-03	--	1E-03	3.E-03
		Exposure Point Total						5.E-07					3.E-03
	Exposure Medium Total							5.E-07					3.E-03
Groundwater Seep Sediment Total								5.E-07					3.E-03
Groundwater Seeps	Surface Water	Seep Surface Water	Manganese	NA	--	NA	--	0.E+00	CNS	2.E-04	--	2.E-03	2.E-03
		Floodplain Area 1A	Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0E+00	--	0.E+00		2E-04	--	2E-03	2.E-03
		Exposure Point Total						0.E+00					2.E-03
	Exposure Medium Total							0.E+00					2.E-03
Groundwater Seep Surface Water Total								0.E+00					2.E-03
Fish Tissue	Fish Tissue	DePue Lake	Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
		Lake-wide	Chemical Total	0.E+00	--	0E+00	--	0.E+00		0E+00	--	0E+00	0.E+00
		Exposure Point Total						0.E+00					0.E+00
	Exposure Medium Total							0.E+00					0.E+00
Fish Tissue Total								0.E+00					0.E+00
Receptor Total							Receptor Risk Total	6.E-06					6.E-02

Total Immune HI Across All Media =	0.E+00
Total Body Weight HI Across All Media =	2.E-05
Total Skin HI Across All Media =	9.E-03
Total Kidney HI Across All Media =	3.E-02
Total Liver HI Across All Media =	2.E-02
Total CNS HI Across All Media =	6.E-03
Total Development HI Across All Media =	3.E-03
Total Blood HI Across All Media =	2.E-03

Table 9.9.CTE
Summary of Receptor Risks and Hazards for COPCs
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor Population: Angler (boat)
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Sediment	Sediment	DePue Lake Surface Sediment Lake-wide	Benzo(a)anthracene	1.E-09	--	7.E-10	--	2.E-09	NA	NA	--	NA	0.E+00
			Benzo(a)pyrene	1.E-07	--	6.E-08	--	2.E-07	NA	NA	--	NA	0.E+00
			Benzo(b)fluoranthene	2.E-09	--	9.E-10	--	2.E-09	NA	NA	--	NA	0.E+00
			Benzo(g,h,i)perylene	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Benzo(k)fluoranthene	9.E-10	--	6.E-10	--	1.E-09	NA	NA	--	NA	0.E+00
			Chrysene	1.E-10	--	6.E-11	--	2.E-10	NA	NA	--	NA	0.E+00
			Dibenz(a,h)anthracene	2.E-08	--	1.E-08	--	3.E-08	NA	NA	--	NA	0.E+00
			Indeno(1,2,3-cd)pyrene	5.E-09	--	3.E-09	--	9.E-09	NA	NA	--	NA	0.E+00
			Naphthalene	NA	--	NA	--	0.E+00	body weight	2.E-06	--	1.E-06	3.E-06
			Gamma-BHC (Lindane)	9.E-08	--	2.E-08	--	1.E-07	liver, kidney	2.E-03	--	4.E-04	3.E-03
			Arsenic	4.E-08	--	1.E-08	--	5.E-08	skin	7.E-04	--	2.E-04	9.E-04
			Cadmium	NA	--	NA	--	0.E+00	kidney	2.E-03	--	4.E-04	2.E-03
			Cobalt	NA	--	NA	--	0.E+00	NA	1.E-03	--	NA	1.E-03
			Copper	NA	--	NA	--	0.E+00	NA	4.E-04	--	NA	4.E-04
			Iron	NA	--	NA	--	0.E+00	NA	8.E-04	--	NA	8.E-04
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	1.E-04	--	NA	1.E-04
			Mercury	NA	--	NA	--	0.E+00	development	5.E-04	--	NA	5.E-04
			Zinc	NA	--	NA	--	0.E+00	blood	5.E-04	--	NA	5.E-04
			Chemical Total	3.E-07	--	1.E-07	--	4.E-07		8E-03	--	9E-04	9.E-03
		Exposure Point Total						4.E-07					9.E-03
	Exposure Medium Total							4.E-07					9.E-03
Sediment Total								4.E-07					9.E-03
Surface Water	Surface Water	DePue Lake Surface Water Lake-wide	Cadmium	NA	--	NA	--	0.E+00	kidney	3.E-05	--	6.E-04	6.E-04
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	8.E-05	--	1.E-03	1.E-03
			Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chloride	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Nitrate as N	NA	--	NA	--	0.E+00	blood	2.E-05	--	NA	2.E-05
			Phosphorus	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Sulfate	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		1E-04	--	2E-03	2.E-03
		Exposure Point Total						0.E+00					2.E-03
	Exposure Medium Total							0.E+00					2.E-03
Surface Water Total								0.E+00					2.E-03

Table 9.9.CTE
Summary of Receptor Risks and Hazards for COPCs
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor Population: Angler (boat)
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater Seeps	Sediment	Seep Sediment	Arsenic	2.E-08	--	5.E-09	--	3.E-08	skin	4.E-04	--	9.E-05	5.E-04
		Floodplain Area 1A	Chemical Total	2.E-08	--	5.0E-09	--	3.E-08		4E-04	--	9E-05	5.E-04
		Exposure Point Total						3.E-08					5.E-04
	Exposure Medium Total							3.E-08					5.E-04
Groundwater Seep Sediment Total								3.E-08					5.E-04
Groundwater Seeps	Surface Water	Seep Surface Water	Manganese	NA	--	NA	--	0.E+00	CNS	7.E-05	--	9.E-04	1.E-03
		Floodplain Area 1A	Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0E+00	--	0.E+00		7E-05	--	9E-04	1.E-03
		Exposure Point Total						0.E+00					1.E-03
	Exposure Medium Total							0.E+00					1.E-03
Groundwater Seep Surface Water Total								0.E+00					1.E-03
Fish Tissue	Fish Tissue	DePue Lake	Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
		Lake-wide	Chemical Total	0.E+00	--	0E+00	--	0.E+00		0E+00	--	0E+00	0.E+00
		Exposure Point Total						0.E+00					0.E+00
	Exposure Medium Total							0.E+00					0.E+00
Fish Tissue Total								0.E+00					0.E+00
Receptor Total							Receptor Risk Total	4.E-07					1.E-02

Total Immune HI Across All Media =	0.E+00
Total Body Weight HI Across All Media =	3.E-06
Total Skin HI Across All Media =	1.E-03
Total Kidney HI Across All Media =	6.E-03
Total Liver HI Across All Media =	3.E-03
Total CNS HI Across All Media =	2.E-03
Total Development HI Across All Media =	5.E-04
Total Blood HI Across All Media =	5.E-04

Table 9.10.RME

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor Population: Angler (boat)
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Sediment	Sediment	DePue Lake Surface Sediment Lake-wide	Benzo(a)anthracene	8.E-08	--	2.E-08	--	1.E-07	NA	NA	--	NA	0.E+00
			Benzo(a)pyrene	7.E-06	--	2.E-06	--	9.E-06	NA	NA	--	NA	0.E+00
			Benzo(b)fluoranthene	1.E-07	--	3.E-08	--	1.E-07	NA	NA	--	NA	0.E+00
			Benzo(g,h,i)perylene	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Benzo(k)fluoranthene	6.E-08	--	2.E-08	--	8.E-08	NA	NA	--	NA	0.E+00
			Chrysene	7.E-09	--	2.E-09	--	9.E-09	NA	NA	--	NA	0.E+00
			Dibenz(a,h)anthracene	1.E-06	--	4.E-07	--	1.E-06	NA	NA	--	NA	0.E+00
			Indeno(1,2,3-cd)pyrene	4.E-07	--	1.E-07	--	5.E-07	NA	NA	--	NA	0.E+00
			Naphthalene	NA	--	NA	--	0.E+00	body weight	7.E-05	--	2.E-05	1.E-04
			Gamma-BHC (Lindane)	3.E-06	--	3.E-07	--	3.E-06	liver, kidney	1.E-01	--	1.E-02	1.E-01
			Arsenic	1.E-06	--	2.E-07	--	1.E-06	skin	3.E-02	--	4.E-03	4.E-02
			Cadmium	NA	--	NA	--	0.E+00	kidney	9.E-02	--	9.E-03	1.E-01
			Cobalt	NA	--	NA	--	0.E+00	NA	6.E-02	--	NA	6.E-02
			Copper	NA	--	NA	--	0.E+00	NA	2.E-02	--	NA	2.E-02
			Iron	NA	--	NA	--	0.E+00	NA	4.E-02	--	NA	4.E-02
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	5.E-03	--	NA	5.E-03
			Mercury	NA	--	NA	--	0.E+00	development	2.E-02	--	NA	2.E-02
			Zinc	NA	--	NA	--	0.E+00	blood	2.E-02	--	NA	2.E-02
			Chemical Total	1.E-05	--	3.E-06	--	2.E-05		4E-01	--	2E-02	4.E-01
		Exposure Point Total						2.E-05					4.E-01
	Exposure Medium Total							2.E-05					4.E-01
Sediment Total								2.E-05					4.E-01
Surface Water	Surface Water	DePue Lake Surface Water Lake-wide	Cadmium	NA	--	NA	--	0.E+00	kidney	3.E-04	--	3.E-03	3.E-03
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	9.E-04	--	6.E-03	6.E-03
			Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chloride	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Nitrate as N	NA	--	NA	--	0.E+00	blood	2.E-04	--	NA	2.E-04
			Phosphorus	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Sulfate	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		1E-03	--	9E-03	1.E-02
		Exposure Point Total						0.E+00					1.E-02
	Exposure Medium Total							0.E+00					1.E-02
Surface Water Total								0.E+00					1.E-02

Table 9.10.RME

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor Population: Angler (boat)
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater Seeps	Sediment	Seep Sediment	Arsenic	7.E-07	--	8.E-08	--	8.E-07	skin	2.E-02	--	2.E-03	2.E-02
		Floodplain Area 1A	Chemical Total	7.E-07	--	8E-08	--	8.E-07		2E-02	--	2E-03	2.E-02
		Exposure Point Total						8.E-07					2.E-02
	Exposure Medium Total							8.E-07					2.E-02
Groundwater Seep Sediment Total								8.E-07					2.E-02
Groundwater Seeps	Surface Water	Seep Surface Water	Manganese	NA	--	NA	--	0.E+00	CNS	8.E-04	--	5.E-03	5.E-03
		Floodplain Area 1A	Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0E+00	--	0.E+00		8E-04	--	5E-03	5.E-03
		Exposure Point Total						0.E+00					5.E-03
	Exposure Medium Total							0.E+00					5.E-03
Groundwater Seep Surface Water Total								0.E+00					5.E-03
Fish Tissue	Fish Tissue	DePue Lake	Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
		Lake-wide	Chemical Total	0.E+00	--	0E+00	--	0.E+00		0E+00	--	0E+00	0.E+00
		Exposure Point Total						0.E+00					0.E+00
	Exposure Medium Total							0.E+00					0.E+00
Fish Tissue Total								0.E+00					0.E+00
Receptor Total							Receptor Risk Total	2.E-05					5.E-01

Total Immune HI Across All Media =	0.E+00
Total Body Weight HI Across All Media =	1.E-04
Total Skin HI Across All Media =	6.E-02
Total Kidney HI Across All Media =	2.E-01
Total Liver HI Across All Media =	1.E-01
Total CNS HI Across All Media =	2.E-02
Total Development HI Across All Media =	2.E-02
Total Blood HI Across All Media =	2.E-02

Table 9.10.CTE
Summary of Receptor Risks and Hazards for COPCs
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor Population: Angler (boat)
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Sediment	Sediment	DePue Lake Surface Sediment Lake-wide	Benzo(a)anthracene	2.E-08	--	2.E-09	--	2.E-08	NA	NA	--	NA	0.E+00
			Benzo(a)pyrene	1.E-06	--	2.E-07	--	2.E-06	NA	NA	--	NA	0.E+00
			Benzo(b)fluoranthene	2.E-08	--	3.E-09	--	2.E-08	NA	NA	--	NA	0.E+00
			Benzo(g,h,i)perylene	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Benzo(k)fluoranthene	1.E-08	--	2.E-09	--	1.E-08	NA	NA	--	NA	0.E+00
			Chrysene	1.E-09	--	2.E-10	--	2.E-09	NA	NA	--	NA	0.E+00
			Dibenz(a,h)anthracene	2.E-07	--	3.E-08	--	3.E-07	NA	NA	--	NA	0.E+00
			Indeno(1,2,3-cd)pyrene	7.E-08	--	9.E-09	--	8.E-08	NA	NA	--	NA	0.E+00
			Naphthalene	NA	--	NA	--	0.E+00	body weight	1.E-05	--	2.E-06	2.E-05
			Gamma-BHC (Lindane)	6.E-07	--	2.E-08	--	6.E-07	liver, kidney	2.E-02	--	8.E-04	2.E-02
			Arsenic	3.E-07	--	1.E-08	--	3.E-07	skin	7.E-03	--	3.E-04	7.E-03
			Cadmium	NA	--	NA	--	0.E+00	kidney	2.E-02	--	7.E-04	2.E-02
			Cobalt	NA	--	NA	--	0.E+00	NA	1.E-02	--	NA	1.E-02
			Copper	NA	--	NA	--	0.E+00	NA	3.E-03	--	NA	3.E-03
			Iron	NA	--	NA	--	0.E+00	NA	7.E-03	--	NA	7.E-03
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	1.E-03	--	NA	1.E-03
			Mercury	NA	--	NA	--	0.E+00	development	5.E-03	--	NA	5.E-03
			Zinc	NA	--	NA	--	0.E+00	blood	4.E-03	--	NA	4.E-03
			Chemical Total	3.E-06	--	3.E-07	--	3.E-06		8E-02	--	2E-03	8.E-02
		Exposure Point Total						3.E-06					8.E-02
	Exposure Medium Total							3.E-06					8.E-02
Sediment Total								3.E-06					8.E-02
Surface Water	Surface Water	DePue Lake Surface Water Lake-wide	Cadmium	NA	--	NA	--	0.E+00	kidney	1.E-04	--	1.E-03	1.E-03
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	4.E-04	--	2.E-03	3.E-03
			Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chloride	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Nitrate as N	NA	--	NA	--	0.E+00	blood	8.E-05	--	NA	8.E-05
			Phosphorus	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Sulfate	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		6E-04	--	3E-03	4.E-03
		Exposure Point Total						0.E+00					4.E-03
	Exposure Medium Total							0.E+00					4.E-03
Surface Water Total								0.E+00					4.E-03

Table 9.10.CTE

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor Population: Angler (boat)
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater Seeps	Sediment	Seep Sediment	Arsenic	1.E-07	--	7.E-09	--	1.E-07	skin	4.E-03	--	2.E-04	4.E-03
			Chemical Total	1.E-07	--	7E-09	--	1.E-07		4E-03	--	2E-04	4.E-03
		Exposure Point Total						1.E-07					4.E-03
	Exposure Medium Total							1.E-07					4.E-03
Groundwater Seep Sediment Total								1.E-07					4.E-03
Groundwater Seeps	Surface Water	Seep Surface Water Floodplain Area 1A	Manganese	NA	--	NA	--	0.E+00	CNS	3.E-04	--	2.E-03	2.E-03
			Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0E+00	--	0.E+00		3E-04	--	2E-03	2.E-03
		Exposure Point Total						0.E+00					2.E-03
	Exposure Medium Total							0.E+00					2.E-03
Groundwater Seep Surface Water Total								0.E+00					2.E-03
Fish Tissue	Fish Tissue	DePue Lake Lake-wide	Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0E+00	--	0.E+00		0E+00	--	0E+00	0.E+00
		Exposure Point Total						0.E+00					0.E+00
	Exposure Medium Total							0.E+00					0.E+00
Fish Tissue Total								0.E+00					0.E+00
Receptor Total							Receptor Risk Total	3.E-06					9.E-02

Total Immune HI Across All Media =	0.E+00
Total Body Weight HI Across All Media =	2.E-05
Total Skin HI Across All Media =	1.E-02
Total Kidney HI Across All Media =	4.E-02
Total Liver HI Across All Media =	2.E-02
Total CNS HI Across All Media =	6.E-03
Total Development HI Across All Media =	5.E-03
Total Blood HI Across All Media =	4.E-03

Table 9.10A.RME

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor Population: Angler (boat)
Receptor Age: Adult + Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Sediment	Sediment	DePue Lake Surface Sediment Lake-wide	Benzo(a)anthracene	9.E-08	--	4.E-08	--	1.E-07	--	--	--	--	--
			Benzo(a)pyrene	8.E-06	--	4.E-06	--	1.E-05	--	--	--	--	--
			Benzo(b)fluoranthene	1.E-07	--	5.E-08	--	2.E-07	--	--	--	--	--
			Benzo(g,h,i)perylene	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Benzo(k)fluoranthene	7.E-08	--	3.E-08	--	1.E-07	--	--	--	--	--
			Chrysene	8.E-09	--	4.E-09	--	1.E-08	--	--	--	--	--
			Dibenz(a,h)anthracene	1.E-06	--	6.E-07	--	2.E-06	--	--	--	--	--
			Indeno(1,2,3-cd)pyrene	4.E-07	--	2.E-07	--	6.E-07	--	--	--	--	--
			Naphthalene	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Gamma-BHC (Lindane)	4.E-06	--	9.E-07	--	5.E-06	--	--	--	--	--
			Arsenic	2.E-06	--	5.E-07	--	2.E-06	--	--	--	--	--
			Cadmium	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Cobalt	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Copper	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Iron	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Lead	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Manganese	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Mercury	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Zinc	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Chemical Total	2.E-05	--	6.E-06	--	2.E-05	--	--	--	--	--
		Exposure Point Total						2.E-05					--
	Exposure Medium Total							2.E-05					--
Sediment Total								2.E-05					--
Surface Water	Surface Water	DePue Lake Surface Water Lake-wide	Cadmium	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Lead	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Manganese	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Ammonia	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Chloride	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Nitrate as N	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Phosphorus	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Sulfate	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
		Exposure Point Total						0.E+00					--
	Exposure Medium Total							0.E+00					--
Surface Water Total								0.E+00					--

Table 9.10A.RME

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor Population: Angler (boat)
Receptor Age: Adult + Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater Seeps	Sediment	Seep Sediment	Arsenic	1.E-06	--	2.E-07	--	1.E-06	--	--	--	--	--
			Chemical Total	1.E-06	--	2.5E-07	--	1.E-06	--	--	--	--	--
		Exposure Point Total						1.E-06					--
	Exposure Medium Total							1.E-06					--
Groundwater Seep Sediment Total								1.E-06					--
Groundwater Seeps	Surface Water	Seep Surface Water Floodplain Area 1A	Manganese	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Ammonia	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
		Exposure Point Total						0.E+00					--
	Exposure Medium Total							0.E+00					--
Groundwater Seep Surface Water Total								0.E+00					--
Fish Tissue	Fish Tissue	DePue Lake Lake-wide	Lead	0.E+00	--	--	--	0.E+00	--	--	--	--	--
			Chemical Total	0.E+00	--	--	--	0.E+00	--	--	--	--	--
		Exposure Point Total						0.E+00					--
	Exposure Medium Total							0.E+00					--
Fish Tissue Total								0.E+00					--
Receptor Total							Receptor Risk Total	2.E-05					--

-- = Non-cancer hazards are evaluated separately for adult and child.

Table 9.10A.CTE

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor Population: Angler (boat)
Receptor Age: Adult + Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Sediment	Sediment	DePue Lake Surface Sediment Lake-wide	Benzo(a)anthracene	2.E-08	--	3.E-09	--	2.E-08	--	--	--	--	--
			Benzo(a)pyrene	1.E-06	--	2.E-07	--	2.E-06	--	--	--	--	--
			Benzo(b)fluoranthene	2.E-08	--	3.E-09	--	3.E-08	--	--	--	--	--
			Benzo(g,h,i)perylene	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Benzo(k)fluoranthene	1.E-08	--	2.E-09	--	2.E-08	--	--	--	--	--
			Chrysene	2.E-09	--	2.E-10	--	2.E-09	--	--	--	--	--
			Dibenz(a,h)anthracene	2.E-07	--	4.E-08	--	3.E-07	--	--	--	--	--
			Indeno(1,2,3-cd)pyrene	8.E-08	--	1.E-08	--	9.E-08	--	--	--	--	--
			Naphthalene	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Gamma-BHC (Lindane)	7.E-07	--	4.E-08	--	7.E-07	--	--	--	--	--
			Arsenic	3.E-07	--	2.E-08	--	3.E-07	--	--	--	--	--
			Cadmium	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Cobalt	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Copper	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Iron	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Lead	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Manganese	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Mercury	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Zinc	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Chemical Total	3.E-06	--	3.6E-07	--	3.E-06	--	--	--	--	--
		Exposure Point Total						3.E-06					--
	Exposure Medium Total							3.E-06					--
Sediment Total								3.E-06					--
Surface Water	Surface Water	DePue Lake Surface Water Lake-wide	Cadmium	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Lead	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Manganese	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Ammonia	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Chloride	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Nitrate as N	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Phosphorus	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Sulfate	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Chemical Total	0.E+00	--	0.0E+00	--	0.E+00	--	--	--	--	--
		Exposure Point Total						0.E+00					--
	Exposure Medium Total							0.E+00					--
Surface Water Total								0.E+00					--

Table 9.10A.CTE

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor Population: Angler (boat)
Receptor Age: Adult + Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater Seeps	Sediment	Seep Sediment	Arsenic	2.E-07	--	1.E-08	--	2.E-07	--	--	--	--	--
			Chemical Total	2.E-07	--	1.E-08	--	2.E-07	--	--	--	--	--
		Exposure Point Total						2.E-07					--
	Exposure Medium Total							2.E-07					--
Groundwater Seep Sediment Total								2.E-07					--
Groundwater Seeps	Surface Water	Seep Surface Water Floodplain Area 1A	Manganese	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Ammonia	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Chemical Total	0.E+00	--	0.0E+00	--	0.E+00	--	--	--	--	--
		Exposure Point Total						0.E+00					--
	Exposure Medium Total							0.E+00					--
Groundwater Seep Surface Water Total								0.E+00					--
Fish Tissue	Fish Tissue	DePue Lake Lake-wide	Lead	0.E+00	--	--	--	0.E+00	--	--	--	--	--
			Chemical Total	0.E+00	--	--	--	0.E+00	--	--	--	--	--
		Exposure Point Total						0.E+00					--
	Exposure Medium Total							0.E+00					--
Fish Tissue Total								0.E+00					--
Receptor Total							Receptor Risk Total	3.E-06					--

-- = Non-cancer hazards are evaluated separately for adult and child.

Table 9.11.RME

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor Population: Angler (Shoreline)
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Sediment	Sediment	DePue Lake Surface Sediment Sediment Area 1A	Benzo(a)anthracene	9.E-08	--	1.E-07	--	2.E-07	NA	NA	--	NA	0.E+00
			Benzo(a)pyrene	8.E-07	--	1.E-06	--	2.E-06	NA	NA	--	NA	0.E+00
			Benzo(b)fluoranthene	7.E-08	--	1.E-07	--	2.E-07	NA	NA	--	NA	0.E+00
			Benzo(g,h,i)perylene	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Benzo(k)fluoranthene	7.E-09	--	1.E-08	--	2.E-08	NA	NA	--	NA	0.E+00
			Chrysene	8.E-10	--	1.E-09	--	2.E-09	NA	NA	--	NA	0.E+00
			Dibenz(a,h)anthracene	1.E-07	--	2.E-07	--	3.E-07	NA	NA	--	NA	0.E+00
			Indeno(1,2,3-cd)pyrene	4.E-08	--	6.E-08	--	1.E-07	NA	NA	--	NA	0.E+00
			Naphthalene	NA	--	NA	--	0.E+00	body weight	4.E-06	--	6.E-06	1.E-05
			Arsenic	2.E-07	--	1.E-07	--	3.E-07	skin	1.E-03	--	8.E-04	2.E-03
			Barium	NA	--	NA	--	0.E+00	kidney	8.E-06	--	NA	8.E-06
			Cadmium	NA	--	NA	--	0.E+00	kidney	3.E-03	--	1.E-03	5.E-03
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	1.E-06	--	2.E-06	--	3.E-06		5E-03	--	2E-03	7.E-03
		Exposure Point Total						3.E-06					7.E-03
	Exposure Medium Total							3.E-06					7.E-03
Sediment Total								3.E-06					7.E-03
Surface Water	Surface Water	DePue Lake Surface Water Eastern Portion of Lake	Cadmium	NA	--	NA	--	0.E+00	kidney	7.E-05	--	1.E-03	2.E-03
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	2.E-04	--	2.E-03	2.E-03
			Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chloride	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Nitrate as N	NA	--	NA	--	0.E+00	blood	8.E-05	--	NA	8.E-05
			Phosphorus	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		3E-04	--	4E-03	4.E-03
		Exposure Point Total						0.E+00					4.E-03
	Exposure Medium Total							0.E+00					4.E-03
Surface Water Total								0.E+00					4.E-03

Table 9.11.RME

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor Population: Angler (Shoreline)
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater Seeps	Sediment	Seep Sediment	Arsenic	2.E-07	--	1.E-07	--	3.E-07	skin	1.E-03	--	6.E-04	2.E-03
		Floodplain Area 1A	Chemical Total	2.E-07	--	1.E-07	--	3.E-07		1E-03	--	6E-04	2.E-03
		Exposure Point Total						3.E-07					2.E-03
	Exposure Medium Total							3.E-07					2.E-03
Groundwater Seep Sediment Total								3.E-07					2.E-03
Groundwater Seeps	Surface Water	Seep Surface Water	Manganese	NA	--	NA	--	0.E+00	CNS	2.E-04	--	2.E-03	2.E-03
		Floodplain Area 1A	Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		2E-04	--	2E-03	2.E-03
		Exposure Point Total						0.E+00					2.E-03
	Exposure Medium Total							0.E+00					2.E-03
Groundwater Seep Surface Water Total								0.E+00					2.E-03
Fish Tissue	Fish Tissue	DePue Lake	Lead	NA	--	NA	--	NA	NA	NA	--	NA	0.E+00
		(Site-Wide)	Chemical Total	NA	--	0.E+00	--	0.E+00		0E+00	--	0E+00	0.E+00
		Exposure Point Total						0.E+00					0.E+00
	Exposure Medium Total							0.E+00					0.E+00
Fish Tissue Total								0.E+00					0.E+00
Receptor Total							Receptor Risk Total	3.E-06				Receptor HI Total	1.E-02

Total Immune HI Across All Media =	0.E+00
Total Body Weight HI Across All Media =	1.E-05
Total Skin HI Across All Media =	4.E-03
Total Kidney HI Across All Media =	6.E-03
Total Liver HI Across All Media =	0.E+00
Total CNS HI Across All Media =	5.E-03
Total Development HI Across All Media =	0.E+00
Total Blood HI Across All Media =	8.E-05

Table 9.11.CTE
Summary of Receptor Risks and Hazards for COPCs
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor Population: Angler (Shoreline)
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Sediment	Sediment	DePue Lake Surface Sediment Sediment Area 1A	Benzo(a)anthracene	1.E-08	--	6.E-09	--	2.E-08	NA	NA	--	NA	0.E+00
			Benzo(a)pyrene	9.E-08	--	5.E-08	--	1.E-07	NA	NA	--	NA	0.E+00
			Benzo(b)fluoranthene	7.E-09	--	4.E-09	--	1.E-08	NA	NA	--	NA	0.E+00
			Benzo(g,h,i)perylene	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Benzo(k)fluoranthene	8.E-10	--	5.E-10	--	1.E-09	NA	NA	--	NA	0.E+00
			Chrysene	9.E-11	--	5.E-11	--	1.E-10	NA	NA	--	NA	0.E+00
			Dibenz(a,h)anthracene	1.E-08	--	8.E-09	--	2.E-08	NA	NA	--	NA	0.E+00
			Indeno(1,2,3-cd)pyrene	4.E-09	--	3.E-09	--	7.E-09	NA	NA	--	NA	0.E+00
			Naphthalene	NA	--	NA	--	0.E+00	body weight	8.E-07	--	5.E-07	1.E-06
			Arsenic	2.E-08	--	3.E-09	--	2.E-08	skin	3.E-04	--	6.E-05	3.E-04
			Barium	NA	--	NA	--	0.E+00	kidney	2.E-06	--	NA	2.E-06
			Cadmium	NA	--	NA	--	0.E+00	kidney	6.E-04	--	1.E-04	7.E-04
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	1.E-07	--	8.E-08	--	2.E-07		9E-04	--	2E-04	1.E-03
		Exposure Point Total						2.E-07					1.E-03
	Exposure Medium Total							2.E-07					1.E-03
Sediment Total								2.E-07					1.E-03
Surface Water	Surface Water	DePue Lake Surface Water Eastern Portion of Lake	Cadmium	NA	--	NA	--	0.E+00	kidney	3.E-05	--	6.E-04	6.E-04
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	6.E-05	--	9.E-04	9.E-04
			Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chloride	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Nitrate as N	NA	--	NA	--	0.E+00	blood	3.E-05	--	NA	3.E-05
			Phosphorus	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		1E-04	--	1E-03	2.E-03
		Exposure Point Total						0.E+00					2.E-03
	Exposure Medium Total							0.E+00					2.E-03
Surface Water Total								0.E+00					2.E-03
Groundwater Seeps	Sediment	Seep Sediment Floodplain Area 1A	Arsenic	1.E-08	--	3.E-09	--	2.E-08	skin	2.E-04	--	5.E-05	3.E-04
			Chemical Total	1.E-08	--	3.E-09	--	2.E-08		2E-04	--	5E-05	3.E-04
		Exposure Point Total						2.E-08					3.E-04
	Exposure Medium Total							2.E-08					3.E-04
Groundwater Seep Sediment Total								2.E-08					3.E-04

Table 9.11.CTE

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor Population: Angler (Shoreline)
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater Seeps	Surface Water	Seep Surface Water Floodplain Area 1A	Manganese	NA	--	NA	--	0.E+00	CNS	7.E-05	--	9.E-04	1.E-03
			Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		7E-05	--	9E-04	1.E-03
		Exposure Point Total						0.E+00					1.E-03
	Exposure Medium Total							0.E+00					1.E-03
Groundwater Seep Surface Water Total								0.E+00					1.E-03
Fish Tissue	Fish Tissue	DePue Lake (Site-Wide)	Lead	NA	--	NA	--	NA	NA	NA	--	NA	0.E+00
			Chemical Total	NA	--	0.E+00	--	0.E+00		0E+00	--	0E+00	0.E+00
		Exposure Point Total						0.E+00					0.E+00
	Exposure Medium Total							0.E+00					0.E+00
Fish Tissue Total								0.E+00					0.E+00
Receptor Total							Receptor Risk Total	2.E-07				Receptor HI Total	4.E-03

Total Immune HI Across All Media =	0.E+00
Total Body Weight HI Across All Media =	1.E-06
Total Skin HI Across All Media =	6.E-04
Total Kidney HI Across All Media =	1.E-03
Total Liver HI Across All Media =	0.E+00
Total CNS HI Across All Media =	2.E-03
Total Development HI Across All Media =	0.E+00
Total Blood HI Across All Media =	3.E-05

Table 9.12.RME
Summary of Receptor Risks and Hazards for COPCs
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor Population: Angler (Shoreline)
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Sediment	Sediment	DePue Lake Surface Sediment Sediment Area 1A	Benzo(a)anthracene	7.E-07	--	2.E-07	--	9.E-07	NA	NA	--	NA	0.E+00
			Benzo(a)pyrene	6.E-06	--	2.E-06	--	7.E-06	NA	NA	--	NA	0.E+00
			Benzo(b)fluoranthene	5.E-07	--	1.E-07	--	6.E-07	NA	NA	--	NA	0.E+00
			Benzo(g,h,i)perylene	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Benzo(k)fluoranthene	5.E-08	--	2.E-08	--	6.E-08	NA	NA	--	NA	0.E+00
			Chrysene	6.E-09	--	2.E-09	--	8.E-09	NA	NA	--	NA	0.E+00
			Dibenz(a,h)anthracene	9.E-07	--	3.E-07	--	1.E-06	NA	NA	--	NA	0.E+00
			Indeno(1,2,3-cd)pyrene	3.E-07	--	9.E-08	--	4.E-07	NA	NA	--	NA	0.E+00
			Naphthalene	NA	--	NA	--	0.E+00	body weight	4.E-05	--	1.E-05	5.E-05
			Arsenic	5.E-07	--	6.E-08	--	5.E-07	skin	1.E-02	--	2.E-03	1.E-02
			Barium	NA	--	NA	--	0.E+00	kidney	8.E-05	--	NA	8.E-05
			Cadmium	NA	--	NA	--	0.E+00	kidney	3.E-02	--	3.E-03	3.E-02
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	8.E-06	--	3.E-06	--	1.E-05		4.E-02	--	4E-03	5.E-02
		Exposure Point Total						1.E-05					5.E-02
	Exposure Medium Total							1.E-05					5.E-02
Sediment Total								1.E-05					5.E-02
Surface Water	Surface Water	DePue Lake Surface Water Eastern Portion of Lake	Cadmium	NA	--	NA	--	0.E+00	kidney	3.E-04	--	3.E-03	3.E-03
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	7.E-04	--	4.E-03	5.E-03
			Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chloride	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Nitrate as N	NA	--	NA	--	0.E+00	blood	4.E-04	--	NA	4.E-04
			Phosphorus	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		1E-03	--	7E-03	9.E-03
		Exposure Point Total						0.E+00					9.E-03
	Exposure Medium Total							0.E+00					9.E-03
Surface Water Total								0.E+00					9.E-03

Table 9.12.RME

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor Population: Angler (Shoreline)
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater Seeps	Sediment	Seep Sediment	Arsenic	4.E-07	--	5.E-08	--	5.E-07	skin	1.E-02	--	1.E-03	1.E-02
		Floodplain Area 1A	Chemical Total	4.E-07	--	5.E-08	--	5.E-07		1E-02	--	1E-03	1.E-02
		Exposure Point Total						5.E-07					1.E-02
	Exposure Medium Total							5.E-07					1.E-02
Groundwater Seep Sediment Total								5.E-07					1.E-02
Groundwater Seeps	Surface Water	Seep Surface Water	Manganese	NA	--	NA	--	0.E+00	CNS	8.E-04	--	5.E-03	5.E-03
		Floodplain Area 1A	Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		8E-04	--	5E-03	5.E-03
		Exposure Point Total						0.E+00					5.E-03
	Exposure Medium Total							0.E+00					5.E-03
Groundwater Seep Surface Water Total								0.E+00					5.E-03
Fish Tissue	Fish Tissue	DePue Lake	Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
		(Site-Wide)	Chemical Total	NA	--	0.E+00	--	0.E+00		0E+00	--	0E+00	0.E+00
		Exposure Point Total						0.E+00					0.E+00
	Exposure Medium Total							0.E+00					0.E+00
Fish Tissue Total								0.E+00					0.E+00
Receptor Total							Receptor Risk Total	1.E-05				Receptor HI Total	7.E-02

Total Immune HI Across All Media =	0.E+00
Total Body Weight HI Across All Media =	5.E-05
Total Skin HI Across All Media =	3.E-02
Total Kidney HI Across All Media =	4.E-02
Total Liver HI Across All Media =	0.E+00
Total CNS HI Across All Media =	1.E-02
Total Development HI Across All Media =	0.E+00
Total Blood HI Across All Media =	4.E-04

Table 9.12.CTE

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor Population: Angler (Shoreline)
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Sediment	Sediment	DePue Lake Surface Sediment Sediment Area 1A	Benzo(a)anthracene	1.E-07	--	2.E-08	--	1.E-07	NA	NA	--	NA	0.E+00
			Benzo(a)pyrene	1.E-06	--	1.E-07	--	1.E-06	NA	NA	--	NA	0.E+00
			Benzo(b)fluoranthene	9.E-08	--	1.E-08	--	1.E-07	NA	NA	--	NA	0.E+00
			Benzo(g,h,i)perylene	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Benzo(k)fluoranthene	1.E-08	--	1.E-09	--	1.E-08	NA	NA	--	NA	0.E+00
			Chrysene	1.E-09	--	1.E-10	--	1.E-09	NA	NA	--	NA	0.E+00
			Dibenz(a,h)anthracene	2.E-07	--	2.E-08	--	2.E-07	NA	NA	--	NA	0.E+00
			Indeno(1,2,3-cd)pyrene	6.E-08	--	7.E-09	--	6.E-08	NA	NA	--	NA	0.E+00
			Naphthalene	NA	--	NA	--	0.E+00	body weight	8.E-06	--	1.E-06	9.E-06
			Arsenic	1.E-07	--	5.E-09	--	1.E-07	skin	2.E-03	--	1.E-04	3.E-03
			Barium	NA	--	NA	--	0.E+00	kidney	2.E-05	--	NA	2.E-05
			Cadmium	NA	--	NA	--	0.E+00	kidney	6.E-03	--	2.E-04	6.E-03
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	2.E-06	--	2.E-07	--	2.E-06		8E-03	--	4E-04	9.E-03
		Exposure Point Total						2.E-06					9.E-03
	Exposure Medium Total							2.E-06					9.E-03
Sediment Total								2.E-06					9.E-03
Surface Water	Surface Water	DePue Lake Surface Water Eastern Portion of Lake	Cadmium	NA	--	NA	--	0.E+00	kidney	1.E-04	--	1.E-03	1.E-03
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	3.E-04	--	2.E-03	2.E-03
			Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chloride	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Nitrate as N	NA	--	NA	--	0.E+00	blood	1.E-04	--	NA	1.E-04
			Phosphorus	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		6E-04	--	3E-03	4.E-03
		Exposure Point Total						0.E+00					4.E-03
	Exposure Medium Total							0.E+00					4.E-03
Surface Water Total								0.E+00					4.E-03

Table 9.12.CTE

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor Population: Angler (Shoreline)
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater Seeps	Sediment	Seep Sediment	Arsenic	8.E-08	--	4.E-09	--	9.E-08	skin	2.E-03	--	1.E-04	2.E-03
		Floodplain Area 1A	Chemical Total	8.E-08	--	4.E-09	--	9.E-08		2E-03	--	1E-04	2.E-03
		Exposure Point Total						9.E-08					2.E-03
	Exposure Medium Total							9.E-08					2.E-03
Groundwater Seep Sediment Total								9.E-08					2.E-03
Groundwater Seeps	Surface Water	Seep Surface Water	Manganese	NA	--	NA	--	0.E+00	CNS	3.E-04	--	2.E-03	2.E-03
		Floodplain Area 1A	Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		3E-04	--	2E-03	2.E-03
		Exposure Point Total						0.E+00					2.E-03
	Exposure Medium Total							0.E+00					2.E-03
Groundwater Seep Surface Water Total								0.E+00					2.E-03
Fish Tissue	Fish Tissue	DePue Lake	Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
		(Site-Wide)	Chemical Total	NA	--	0.E+00	--	0.E+00		0E+00	--	0E+00	0.E+00
		Exposure Point Total						0.E+00					0.E+00
	Exposure Medium Total							0.E+00					0.E+00
Fish Tissue Total								0.E+00					0.E+00
Receptor Total							Receptor Risk Total	2.E-06				Receptor HI Total	2.E-02

Total Immune HI Across All Media =	0.E+00
Total Body Weight HI Across All Media =	9.E-06
Total Skin HI Across All Media =	5.E-03
Total Kidney HI Across All Media =	7.E-03
Total Liver HI Across All Media =	0.E+00
Total CNS HI Across All Media =	4.E-03
Total Development HI Across All Media =	0.E+00
Total Blood HI Across All Media =	1.E-04

Table 9.12A.RME

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor Population: Angler (Shoreline)
Receptor Age: Adult + Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Sediment	Sediment	DePue Lake Surface Sediment Sediment Area 1A	Benzo(a)anthracene	8.E-07	--	3.E-07	--	1.E-06	--	--	--	--	--
			Benzo(a)pyrene	6.E-06	--	3.E-06	--	9.E-06	--	--	--	--	--
			Benzo(b)fluoranthene	5.E-07	--	2.E-07	--	8.E-07	--	--	--	--	--
			Benzo(g,h,i)perylene	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Benzo(k)fluoranthene	6.E-08	--	3.E-08	--	8.E-08	--	--	--	--	--
			Chrysene	7.E-09	--	3.E-09	--	1.E-08	--	--	--	--	--
			Dibenz(a,h)anthracene	1.E-06	--	5.E-07	--	2.E-06	--	--	--	--	--
			Indeno(1,2,3-cd)pyrene	3.E-07	--	1.E-07	--	5.E-07	--	--	--	--	--
			Naphthalene	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Arsenic	7.E-07	--	2.E-07	--	9.E-07	--	--	--	--	--
			Barium	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Cadmium	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Lead	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Chemical Total	1.E-05	--	4.E-06	--	1.E-05		--	--	--	--
		Exposure Point Total						1.E-05					--
	Exposure Medium Total							1.E-05					--
Sediment Total								1.E-05					--
Surface Water	Surface Water	DePue Lake Surface Water Eastern Portion of Lake	Cadmium	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Lead	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Manganese	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Ammonia	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Chloride	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Nitrate as N	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Phosphorus	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		--	--	--	--
		Exposure Point Total						0.E+00					--
	Exposure Medium Total							0.E+00					--
Surface Water Total								0.E+00					--

Table 9.12A.RME

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor Population: Angler (Shoreline)
Receptor Age: Adult + Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater Seeps	Sediment	Seep Sediment	Arsenic	6.E-07	--	1.E-07	--	7.E-07	--	--	--	--	--
		Floodplain Area 1A	Chemical Total	6.E-07	--	1.E-07	--	7.E-07		--	--	--	--
		Exposure Point Total						7.E-07					--
	Exposure Medium Total							7.E-07					--
Groundwater Seep Sediment Total								7.E-07					--
Groundwater Seeps	Surface Water	Seep Surface Water	Manganese	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
		Floodplain Area 1A	Ammonia	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		--	--	--	--
		Exposure Point Total						0.E+00					--
	Exposure Medium Total							0.E+00					--
Groundwater Seep Surface Water Total								0.E+00					--
Fish Tissue	Fish Tissue	DePue Lake	Lead	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
		(Site-Wide)	Chemical Total	0.E+00	--	0.E+00	--	0.E+00		--	--	--	--
		Exposure Point Total						0.E+00					--
	Exposure Medium Total							0.E+00					--
Fish Tissue Total								0.E+00					--
Receptor Total							Receptor Risk Total	1.E-05				Receptor HI Total	--

-- = Non-cancer hazards are evaluated separately for adult and child.

Table 9.12A.CTE

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor Population: Angler (Shoreline)
Receptor Age: Adult + Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Sediment	Sediment	DePue Lake Surface Sediment Sediment Area 1A	Benzo(a)anthracene	1.E-07	--	2.E-08	--	2.E-07	--	--	--	--	--
			Benzo(a)pyrene	1.E-06	--	2.E-07	--	1.E-06	--	--	--	--	--
			Benzo(b)fluoranthene	1.E-07	--	2.E-08	--	1.E-07	--	--	--	--	--
			Benzo(g,h,i)perylene	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Benzo(k)fluoranthene	1.E-08	--	2.E-09	--	1.E-08	--	--	--	--	--
			Chrysene	1.E-09	--	2.E-10	--	1.E-09	--	--	--	--	--
			Dibenz(a,h)anthracene	2.E-07	--	3.E-08	--	2.E-07	--	--	--	--	--
			Indeno(1,2,3-cd)pyrene	6.E-08	--	1.E-08	--	7.E-08	--	--	--	--	--
			Naphthalene	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Arsenic	1.E-07	--	8.E-09	--	1.E-07	--	--	--	--	--
			Barium	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Cadmium	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Lead	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Chemical Total	2.E-06	--	3.E-07	--	2.E-06		--	--	--	--
		Exposure Point Total						2.E-06					--
	Exposure Medium Total							2.E-06					--
Sediment Total								2.E-06					--
Surface Water	Surface Water	DePue Lake Surface Water Eastern Portion of Lake	Cadmium	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Lead	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Manganese	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Ammonia	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Chloride	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Nitrate as N	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Phosphorus	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		--	--	--	--
		Exposure Point Total						0.E+00					--
	Exposure Medium Total							0.E+00					--
Surface Water Total								0.E+00					--

Table 9.12A.CTE

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake/Floodplain Area 1A
Receptor Population: Angler (Shoreline)
Receptor Age: Adult + Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater Seeps	Sediment	Seep Sediment Floodplain Area 1A	Arsenic	9.E-08	--	7.E-09	--	1.E-07	--	--	--	--	--
			Chemical Total	9.E-08	--	7.E-09	--	1.E-07		--	--	--	--
		Exposure Point Total						1.E-07					--
	Exposure Medium Total							1.E-07					--
Groundwater Seep Sediment Total								1.E-07					--
Groundwater Seeps	Surface Water	Seep Surface Water Floodplain Area 1A	Manganese	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Ammonia	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		--	--	--	--
		Exposure Point Total						0.E+00					--
	Exposure Medium Total							0.E+00					--
Groundwater Seep Surface Water Total								0.E+00					--
Fish Tissue	Fish Tissue	DePue Lake (Site-Wide)	Lead	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		--	--	--	--
		Exposure Point Total						0.E+00					--
	Exposure Medium Total							0.E+00					--
Fish Tissue Total								0.E+00					--
Receptor Total							Receptor Risk Total	2.E-06					--

-- = Non-cancer hazards are evaluated separately for adult and child.

Table 9.13.RME

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor Population: Village Park Maintenance Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Sediment	Sediment	DePue Lake Surface and Subsurface Sediment Sediment Area 1A	Benzo(a)anthracene	4.E-08	--	3.E-08	--	7.E-08	NA	NA	--	NA	0.E+00
			Benzo(a)pyrene	4.E-07	--	2.E-07	--	6.E-07	NA	NA	--	NA	0.E+00
			Benzo(b)fluoranthene	3.E-08	--	2.E-08	--	5.E-08	NA	NA	--	NA	0.E+00
			Chrysene	4.E-10	--	2.E-10	--	6.E-10	NA	NA	--	NA	0.E+00
			Dibenz(a,h)anthracene	6.E-08	--	4.E-08	--	1.E-07	NA	NA	--	NA	0.E+00
			Indeno(1,2,3-cd)pyrene	2.E-08	--	1.E-08	--	3.E-08	NA	NA	--	NA	0.E+00
			Naphthalene	NA	--	NA	--	0.E+00	body weight	6.E-06	--	4.E-06	1.E-05
			Arsenic	2.E-07	--	5.E-08	--	2.E-07	skin	1.E-03	--	3.E-04	2.E-03
			Cadmium	NA	--	NA	--	0.E+00	kidney	3.E-03	--	6.E-04	4.E-03
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Zinc	NA	--	NA	--	0.E+00	blood	7.E-04	--	NA	7.E-04
			Chemical Total	7.E-07	--	4.E-07	--	1.E-06		5E-03	--	9E-04	6.E-03
		Exposure Point Total						1.E-06					6.E-03
	Exposure Medium Total							1.E-06					6.E-03
Sediment Total								1.E-06					6.E-03
Surface Water	Surface Water	DePue Lake Surface Water Eastern Portion of Lake	Cadmium	NA	--	NA	--	0.E+00	kidney	8.E-05	--	7.E-04	8.E-04
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	2.E-04	--	1.E-03	1.E-03
			Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chloride	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Nitrate as N	NA	--	NA	--	0.E+00	blood	9.E-05	--	NA	9.E-05
			Phosphorus	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		3E-04	--	2E-03	2.E-03
		Exposure Point Total						0.E+00					2.E-03
	Exposure Medium Total							0.E+00					2.E-03
Surface Water Total								0.E+00					2.E-03

Table 9.13.RME

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor Population: Village Park Maintenance Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater Seeps	Sediment	Sediment Floodplain Area 1A	Arsenic	2.E-07	--	5.E-08	--	2.E-07	skin	1.E-03	--	3.E-04	2.E-03
			Chemical Total	2.E-07	--	5.E-08	--	2.E-07		1E-03	--	3E-04	2.E-03
		Exposure Point Total						2.E-07					2.E-03
	Exposure Medium Total							2.E-07					2.E-03
Groundwater Seep Sediment Total								2.E-07					2.E-03
Groundwater Seeps	Surface Water	Surface Water Floodplain Area 1A	Manganese	NA	--	NA	--	0.E+00	CNS	2.E-04	--	1.E-03	1.E-03
			Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		2E-04	--	1E-03	1.E-03
		Exposure Point Total						0.E+00					1.E-03
	Exposure Medium Total							0.E+00					1.E-03
Groundwater Seep Surface Water Total								0.E+00					1.E-03
Receptor Total							Receptor Risk Total	1.E-06				Receptor HI Total	1.E-02

Total Immune HI Across All Media =	0.E+00
Total Body Weight HI Across All Media =	1.E-05
Total Skin HI Across All Media =	3.E-03
Total Kidney HI Across All Media =	5.E-03
Total Liver HI Across All Media =	0.E+00
Total CNS HI Across All Media =	2.E-03
Total Development HI Across All Media =	0.E+00
Total Blood HI Across All Media =	8.E-04

Table 9.13.CTE

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor Population: Village Park Maintenance Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Sediment	Sediment	DePue Lake Surface and Subsurface Sediment Sediment Area 1A	Benzo(a)anthracene	4.E-09	--	2.E-09	--	6.E-09	NA	NA	--	NA	0.E+00
			Benzo(a)pyrene	3.E-08	--	2.E-08	--	5.E-08	NA	NA	--	NA	0.E+00
			Benzo(b)fluoranthene	3.E-09	--	2.E-09	--	4.E-09	NA	NA	--	NA	0.E+00
			Chrysene	3.E-11	--	2.E-11	--	5.E-11	NA	NA	--	NA	0.E+00
			Dibenz(a,h)anthracene	5.E-09	--	3.E-09	--	9.E-09	NA	NA	--	NA	0.E+00
			Indeno(1,2,3-cd)pyrene	2.E-09	--	1.E-09	--	3.E-09	NA	NA	--	NA	0.E+00
			Naphthalene	NA	--	NA	--	0.E+00	body weight	2.E-06	--	9.E-07	3.E-06
			Arsenic	2.E-08	--	4.E-09	--	2.E-08	skin	3.E-04	--	7.E-05	4.E-04
			Cadmium	NA	--	NA	--	0.E+00	kidney	9.E-04	--	2.E-04	1.E-03
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Zinc	NA	--	NA	--	0.E+00	blood	2.E-04	--	NA	2.E-04
			Chemical Total	7.E-08	--	3.E-08	--	1.E-07		1E-03	--	2E-04	2.E-03
		Exposure Point Total						1.E-07					2.E-03
	Exposure Medium Total							1.E-07					2.E-03
Sediment Total								1.E-07					2.E-03
Surface Water	Surface Water	DePue Lake Surface Water Eastern Portion of Lake	Cadmium	NA	--	NA	--	0.E+00	kidney	4.E-05	--	3.E-04	4.E-04
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	9.E-05	--	5.E-04	6.E-04
			Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chloride	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Nitrate as N	NA	--	NA	--	0.E+00	blood	4.E-05	--	NA	4.E-05
			Phosphorus	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		2E-04	--	8E-04	1.E-03
		Exposure Point Total						0.E+00					1.E-03
	Exposure Medium Total							0.E+00					1.E-03
Surface Water Total								0.E+00					1.E-03

Table 9.13.CTE

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1A
Receptor Population: Village Park Maintenance Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater Seeps	Sediment	Sediment Floodplain Area 1A	Arsenic	2.E-08	--	4.E-09	--	2.E-08	skin	3.E-04	--	7.E-05	4.E-04
			Chemical Total	2.E-08	--	4.E-09	--	2.E-08		3E-04	--	7E-05	4.E-04
		Exposure Point Total						2.E-08					4.E-04
	Exposure Medium Total							2.E-08					4.E-04
Groundwater Seep Sediment Total								2.E-08					4.E-04
Groundwater Seeps	Surface Water	Surface Water Floodplain Area 1A	Manganese	NA	--	NA	--	0.E+00	CNS	9.E-05	--	5.E-04	6.E-04
			Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		9E-05	--	5E-04	6.E-04
		Exposure Point Total						0.E+00					6.E-04
	Exposure Medium Total							0.E+00					6.E-04
Groundwater Seep Surface Water Total								0.E+00					6.E-04
Receptor Total							Receptor Risk Total	1.E-07				Receptor HI Total	4.E-03

Total Immune HI Across All Media =	0.E+00
Total Body Weight HI Across All Media =	3.E-06
Total Skin HI Across All Media =	8.E-04
Total Kidney HI Across All Media =	1.E-03
Total Liver HI Across All Media =	0.E+00
Total CNS HI Across All Media =	1.E-03
Total Development HI Across All Media =	0.E+00
Total Blood HI Across All Media =	2.E-04

Table 9.14.RME
Summary of Receptor Risks and Hazards for COPCs
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1B
Receptor Population: Utility Maintenance Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface and Subsurface Soil	Surface and Subsurface Soil	Floodplain Area 1A Surface and Subsurface Soil Floodplain Area 1B WWTP Transect LL-5	Benzo(a)anthracene	1.E-08	--	5.E-09	--	2.E-08	NA	NA	--	NA	0.E+00
			Benzo(a)pyrene	2.E-07	--	6.E-08	--	2.E-07	NA	NA	--	NA	0.E+00
			Benzo(b)fluoranthene	2.E-08	--	8.E-09	--	3.E-08	NA	NA	--	NA	0.E+00
			Benzo(g,h,i)perylene	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Benzo(k)fluoranthene	2.E-09	--	6.E-10	--	2.E-09	NA	NA	--	NA	0.E+00
			Chrysene	2.E-10	--	9.E-11	--	3.E-10	NA	NA	--	NA	0.E+00
			Dibenz(a,h)anthracene	6.E-08	--	2.E-08	--	8.E-08	NA	NA	--	NA	0.E+00
			Indeno(1,2,3-cd)pyrene	1.E-08	--	4.E-09	--	2.E-08	NA	NA	--	NA	0.E+00
			Aroclor 1254*	7.E-09	--	3.E-09	--	1.E-08	immune	5.E-04	--	2.E-04	7.E-04
			Dieldrin*	3.E-09	--	NA	--	3.E-09	liver	1.E-05	--	NA	1.E-05
			Antimony*	NA	--	NA	--	0.E+00	blood	7.E-04	--	NA	7.E-04
			Arsenic	5.E-06	--	7.E-07	--	5.E-06	skin	3.E-02	--	4.E-03	3.E-02
			Barium	NA	--	NA	--	0.E+00	kidney	7.E-04	--	NA	7.E-04
			Cadmium	NA	--	NA	--	0.E+00	kidney	5.E-02	--	6.E-03	6.E-02
			Cobalt	NA	--	NA	--	0.E+00	NA	4.E-03	--	NA	4.E-03
			Copper	NA	--	NA	--	0.E+00	NA	2.E-03	--	NA	2.E-03
			Iron	NA	--	NA	--	0.E+00	NA	4.E-03	--	NA	4.E-03
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	5.E-04	--	NA	5.E-04
			Mercury	NA	--	NA	--	0.E+00	development	4.E-03	--	NA	4.E-03
			Selenium*	NA	--	NA	--	0.E+00	skin	2.E-04	--	NA	2.E-04
			Silver*	NA	--	NA	--	0.E+00	skin	2.E-04	--	NA	2.E-04
			Zinc	NA	--	NA	--	0.E+00	blood	1.E-02	--	NA	1.E-02
			Fluoride*	NA	--	NA	--	0.E+00	dental fluorosis	5.E-05	--	NA	5.E-05
			Chemical Total	5.E-06	--	8.E-07	--	6.E-06		1E-01	--	1E-02	1.E-01
		Exposure Point Total						6.E-06					1.E-01
	Exposure Medium Total							6.E-06					1.E-01
Sediment Total								6.E-06					1.E-01

Table 9.14.RME
Summary of Receptor Risks and Hazards for COPCs
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1B
Receptor Population: Utility Maintenance Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Sediment	Sediment	DePue Lake Surface and Subsurface Sediment Sediment Area 1B	Benzo(a)anthracene	8.E-10	--	5.E-10	--	1.E-09	NA	NA	--	NA	0.E+00
			Benzo(a)pyrene	3.E-09	--	2.E-09	--	6.E-09	NA	NA	--	NA	0.E+00
			Benzo(b)fluoranthene	6.E-10	--	4.E-10	--	1.E-09	NA	NA	--	NA	0.E+00
			Benzo(k)fluoranthene	3.E-11	--	2.E-11	--	5.E-11	NA	NA	--	NA	0.E+00
			Chrysene	1.E-11	--	7.E-12	--	2.E-11	NA	NA	--	NA	0.E+00
			Dibenz(a,h)anthracene	6.E-10	--	3.E-10	--	9.E-10	NA	NA	--	NA	0.E+00
			Indeno(1,2,3-cd)pyrene	1.E-12	--	6.E-11	--	6.E-11	NA	NA	--	NA	0.E+00
			Naphthalene	NA	--	NA	--	0.E+00	body weight	1.E-06	--	7.E-07	2.E-06
			Arsenic	2.E-07	--	4.E-08	--	2.E-07	skin	1.E-03	--	2.E-04	1.E-03
			Cadmium	NA	--	NA	--	0.E+00	kidney	5.E-03	--	9.E-04	6.E-03
			Cobalt	NA	--	NA	--	0.E+00	NA	3.E-03	--	NA	3.E-03
			Copper	NA	--	NA	--	0.E+00	NA	2.E-03	--	NA	2.E-03
			Iron	NA	--	NA	--	0.E+00	NA	6.E-04	--	NA	6.E-04
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	2.E-04	--	NA	2.E-04
			Mercury	NA	--	NA	--	0.E+00	development	2.E-03	--	NA	2.E-03
			Zinc	NA	--	NA	--	0.E+00	blood	1.E-03	--	NA	1.E-03
			Chemical Total	2.E-07	--	4.E-08	--	2.E-07		1E-02	--	1E-03	2.E-02
		Exposure Point Total						2.E-07					2.E-02
	Exposure Medium Total							2.E-07					2.E-02
Sediment Total								2.E-07					2.E-02
Surface Water	Surface Water	DePue Lake Surface Water Eastern Portion of Lake	Cadmium	NA	--	NA	--	0.E+00	kidney	1.E-05	--	1.E-04	1.E-04
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	3.E-05	--	2.E-04	2.E-04
			Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chloride	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Nitrate as N	NA	--	NA	--	0.E+00	blood	2.E-05	--	NA	2.E-05
			Phosphorus	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		6E-05	--	3E-04	4.E-04
		Exposure Point Total						0.E+00					4.E-04
	Exposure Medium Total							0.E+00					4.E-04
Surface Water Total								0.E+00					4.E-04

Table 9.14.RME
Summary of Receptor Risks and Hazards for COPCs
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1B
Receptor Population: Utility Maintenance Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater Seeps	Sediment	Sediment Floodplain Area 1B	Arsenic	2.E-07	--	4.E-08	--	2.E-07	skin	1.E-03	--	2.E-04	1.E-03
			Cadmium	NA	--	NA	--	0.E+00	kidney	2.E-02	--	3.E-03	2.E-02
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Zinc	NA	--	NA	--	0.E+00	blood	4.E-03	--	NA	4.E-03
			Chemical Total	2.E-07	--	4.E-08	--	2.E-07		2E-02	--	3E-03	2.E-02
		Exposure Point Total						2.E-07					2.E-02
	Exposure Medium Total							2.E-07					2.E-02
Groundwater Seep Sediment Total								2.E-07					2.E-02
Groundwater Seeps	Surface Water	Surface Water Floodplain Area 1B	Cadmium	NA	--	NA	--	0.E+00	kidney	4.E-05	--	4.E-04	4.E-04
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	3.E-05	--	2.E-04	2.E-04
			Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Phosphorus	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		8E-05	--	6E-04	6.E-04
		Exposure Point Total						0.E+00					6.E-04
	Exposure Medium Total							0.E+00					6.E-04
Groundwater Seep Surface Water Total								0.E+00					6.E-04
Receptor Total							Receptor Risk Total	6.E-06				Receptor HI Total	2.E-01

Total Immune HI Across All Media =	7.E-04
Total Body Weight HI Across All Media =	2.E-06
Total Skin HI Across All Media =	4.E-02
Total Kidney HI Across All Media =	8.E-02
Total Liver HI Across All Media =	1.E-05
Total CNS HI Across All Media =	1.E-03
Total Dental Fluorosis HI Across All Media =	5.E-05
Total Development HI Across All Media =	6.E-03
Total Blood HI Across All Media =	2.E-02

Table 9.14.CTE

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1B
Receptor Population: Utility Maintenance Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface and Subsurface Soil	Surface and Subsurface Soil	Floodplain Area 1A	Benzo(a)anthracene	7.E-10	--	3.E-10	--	1.E-09	NA	NA	--	NA	0.E+00
		Surface and	Benzo(a)pyrene	9.E-09	--	4.E-09	--	1.E-08	NA	NA	--	NA	0.E+00
		Subsurface Soil	Benzo(b)fluoranthene	1.E-09	--	5.E-10	--	2.E-09	NA	NA	--	NA	0.E+00
		Floodplain Area 1B	Benzo(g,h,i)perylene	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
		WWTP Transect LL-5	Benzo(k)fluoranthene	8.E-11	--	4.E-11	--	1.E-10	NA	NA	--	NA	0.E+00
			Chrysene	1.E-11	--	5.E-12	--	2.E-11	NA	NA	--	NA	0.E+00
			Dibenz(a,h)anthracene	3.E-09	--	1.E-09	--	5.E-09	NA	NA	--	NA	0.E+00
			Indeno(1,2,3-cd)pyrene	6.E-10	--	3.E-10	--	9.E-10	NA	NA	--	NA	0.E+00
			Aroclor 1254*	4.E-10	--	2.E-10	--	6.E-10	immune	7.E-05	--	3.E-05	1.E-04
			Dieldrin*	2.E-10	--	NA	--	2.E-10	liver	2.E-06	--	NA	2.E-06
			Antimony*	NA	--	NA	--	0.E+00	blood	1.E-04	--	NA	1.E-04
			Arsenic	3.E-07	--	4.E-08	--	3.E-07	skin	4.E-03	--	7.E-04	5.E-03
			Barium	NA	--	NA	--	0.E+00	kidney	1.E-04	--	NA	1.E-04
			Cadmium	NA	--	NA	--	0.E+00	kidney	8.E-03	--	1.E-03	9.E-03
			Cobalt	NA	--	NA	--	0.E+00	NA	6.E-04	--	NA	6.E-04
			Copper	NA	--	NA	--	0.E+00	NA	3.E-04	--	NA	3.E-04
			Iron	NA	--	NA	--	0.E+00	NA	6.E-04	--	NA	6.E-04
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	7.E-05	--	NA	7.E-05
			Mercury	NA	--	NA	--	0.E+00	development	7.E-04	--	NA	7.E-04
			Selenium*	NA	--	NA	--	0.E+00	skin	3.E-05	--	NA	3.E-05
			Silver*	NA	--	NA	--	0.E+00	skin	4.E-05	--	NA	4.E-05
			Zinc	NA	--	NA	--	0.E+00	blood	2.E-03	--	NA	2.E-03
			Fluoride*	NA	--	NA	--	0.E+00	dental fluorosis	8.E-06	--	NA	8.E-06
			Chemical Total	3.E-07	--	5.E-08	--	3.E-07		2E-02	--	2E-03	2.E-02
		Exposure Point Total						3.E-07					2.E-02
	Exposure Medium Total							3.E-07					2.E-02
Sediment Total								3.E-07					2.E-02

Table 9.14.CTE

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1B
Receptor Population: Utility Maintenance Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Sediment	Sediment	DePue Lake Surface and Subsurface Sediment Sediment Area 1B	Benzo(a)anthracene	7.E-11	--	4.E-11	--	1.E-10	NA	NA	--	NA	0.E+00
			Benzo(a)pyrene	3.E-10	--	2.E-10	--	5.E-10	NA	NA	--	NA	0.E+00
			Benzo(b)fluoranthene	6.E-11	--	3.E-11	--	9.E-11	NA	NA	--	NA	0.E+00
			Benzo(k)fluoranthene	3.E-12	--	2.E-12	--	5.E-12	NA	NA	--	NA	0.E+00
			Chrysene	1.E-12	--	6.E-13	--	2.E-12	NA	NA	--	NA	0.E+00
			Dibenz(a,h)anthracene	5.E-11	--	3.E-11	--	8.E-11	NA	NA	--	NA	0.E+00
			Indeno(1,2,3-cd)pyrene	9.E-14	--	5.E-12	--	5.E-12	NA	NA	--	NA	0.E+00
			Naphthalene	NA	--	NA	--	0.E+00	body weight	3.E-07	--	2.E-07	4.E-07
			Arsenic	1.E-08	--	3.E-09	--	2.E-08	skin	2.E-04	--	6.E-05	3.E-04
			Cadmium	NA	--	NA	--	0.E+00	kidney	1.E-03	--	2.E-04	1.E-03
			Cobalt	NA	--	NA	--	0.E+00	NA	8.E-04	--	NA	8.E-04
			Copper	NA	--	NA	--	0.E+00	NA	4.E-04	--	NA	4.E-04
			Iron	NA	--	NA	--	0.E+00	NA	2.E-04	--	NA	2.E-04
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	5.E-05	--	NA	5.E-05
			Mercury	NA	--	NA	--	0.E+00	development	4.E-04	--	NA	4.E-04
			Zinc	NA	--	NA	--	0.E+00	blood	3.E-04	--	NA	3.E-04
			Chemical Total	1.E-08	--	4.E-09	--	2.E-08		4E-03	--	3E-04	4.E-03
		Exposure Point Total						2.E-08					4.E-03
	Exposure Medium Total							2.E-08					4.E-03
Sediment Total								2.E-08					4.E-03
Surface Water	Surface Water	DePue Lake Surface Water Eastern Portion of Lake	Cadmium	NA	--	NA	--	0.E+00	kidney	7.E-06	--	6.E-05	7.E-05
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	2.E-05	--	9.E-05	1.E-04
			Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chloride	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Nitrate as N	NA	--	NA	--	0.E+00	blood	8.E-06	--	NA	8.E-06
			Phosphorus	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		3E-05	--	1E-04	2.E-04
		Exposure Point Total						0.E+00					2.E-04
	Exposure Medium Total							0.E+00					2.E-04
Surface Water Total								0.E+00					2.E-04

Table 9.14.CTE

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain/Sediment Area 1B
Receptor Population: Utility Maintenance Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater Seeps	Sediment	Sediment Floodplain Area 1B	Arsenic	2.E-08	--	4.E-09	--	2.E-08	skin	3.E-04	--	6.E-05	3.E-04
			Cadmium	NA	--	NA	--	0.E+00	kidney	4.E-03	--	8.E-04	5.E-03
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Zinc	NA	--	NA	--	0.E+00	blood	9.E-04	--	NA	9.E-04
			Chemical Total	2.E-08	--	4.E-09	--	2.E-08		5E-03	--	8E-04	6.E-03
		Exposure Point Total						2.E-08					6.E-03
	Exposure Medium Total							2.E-08					6.E-03
Groundwater Seep Sediment Total								2.E-08					6.E-03
Groundwater Seeps	Surface Water	Surface Water Floodplain Area 1B	Cadmium	NA	--	NA	--	0.E+00	kidney	2.E-05	--	2.E-04	2.E-04
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	2.E-05	--	9.E-05	1.E-04
			Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Phosphorus	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		4E-05	--	3E-04	3.E-04
		Exposure Point Total						0.E+00					3.E-04
	Exposure Medium Total							0.E+00					3.E-04
Groundwater Seep Surface Water Total								0.E+00					3.E-04
Receptor Total							Receptor Risk Total	4.E-07				Receptor HI Total	3.E-02

Total Immune HI Across All Media =	1.E-04
Total Body Weight HI Across All Media =	4.E-07
Total Skin HI Across All Media =	6.E-03
Total Kidney HI Across All Media =	2.E-02
Total Liver HI Across All Media =	2.E-06
Total CNS HI Across All Media =	3.E-04
Total Dental Fluorosis HI Across All Media =	8.E-06
Total Development HI Across All Media =	1.E-03
Total Blood HI Across All Media =	3.E-03

Table 9.15.RME
Summary of Receptor Risks and Hazards for COPCs
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain Area 2
Receptor Population: Wildlife Worker and Hunter
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface and Subsurface Soil	Surface and Subsurface Soil	Floodplain Surface and Subsurface Soil Floodplain Area 2	Benzo(a)anthracene	5.E-09	--	5.E-09	--	1.E-08	NA	NA	--	NA	0.E+00
			Benzo(a)pyrene	7.E-08	--	6.E-08	--	1.E-07	NA	NA	--	NA	0.E+00
			Benzo(b)fluoranthene	7.E-09	--	6.E-09	--	1.E-08	NA	NA	--	NA	0.E+00
			Benzo(k)fluoranthene	6.E-10	--	5.E-10	--	1.E-09	NA	NA	--	NA	0.E+00
			Chrysene	7.E-11	--	6.E-11	--	1.E-10	NA	NA	--	NA	0.E+00
			Indeno(1,2,3-cd)pyrene	6.E-09	--	5.E-09	--	1.E-08	NA	NA	--	NA	0.E+00
			Arsenic	5.E-07	--	2.E-07	--	7.E-07	skin	3.E-03	--	1.E-03	4.E-03
			Barium	NA	--	NA	--	0.E+00	kidney	4.E-04	--	NA	4.E-04
			Cadmium*	NA	--	NA	--	0.E+00	kidney	1.E-03	--	7.E-04	2.E-03
			Chromium*	NA	--	NA	--	0.E+00	none reported	2.E-03	--	NA	2.E-03
			Cobalt*	NA	--	NA	--	0.E+00	NA	5.E-03	--	NA	5.E-03
			Dieldrin*	2.E-09	--	NA	--	2.E-09	liver	7.E-06	--	NA	7.E-06
			Iron	NA	--	NA	--	0.E+00	NA	6.E-03	--	NA	6.E-03
			Lead*	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	8.E-04	--	NA	8.E-04
			Chemical Total	6.E-07	--	2.E-07	--	8.E-07		2E-02	--	2E-03	2.E-02
		Exposure Point Total						8.E-07					2.E-02
	Exposure Medium Total							8.E-07					2.E-02
Sediment Total								8.E-07					2.E-02
Sediment	Sediment	DePue Lake Surface and Subsurface Sediment Sediment Area 2	Benzo(a)anthracene	7.E-09	--	4.E-09	--	1.E-08	NA	NA	--	NA	0.E+00
			Benzo(a)pyrene	8.E-08	--	5.E-08	--	1.E-07	NA	NA	--	NA	0.E+00
			Benzo(b)fluoranthene	1.E-08	--	8.E-09	--	2.E-08	NA	NA	--	NA	0.E+00
			Benzo(g,h,i)perylene	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Benzo(k)fluoranthene	1.E-09	--	6.E-10	--	2.E-09	NA	NA	--	NA	0.E+00
			Chrysene	1.E-10	--	6.E-11	--	2.E-10	NA	NA	--	NA	0.E+00
			Dibenz(a,h)anthracene	2.E-08	--	1.E-08	--	3.E-08	NA	NA	--	NA	0.E+00
			Indeno(1,2,3-cd)pyrene	8.E-09	--	5.E-09	--	1.E-08	NA	NA	--	NA	0.E+00
			Arsenic	4.E-07	--	1.E-07	--	5.E-07	skin	3.E-03	--	6.E-04	3.E-03
			Barium	NA	--	NA	--	0.E+00	kidney	3.E-04	--	NA	3.E-04
			Iron	NA	--	NA	--	0.E+00	NA	6.E-03	--	NA	6.E-03
			Manganese	NA	--	NA	--	0.E+00	CNS	7.E-04	--	NA	7.E-04
			Zinc	NA	--	NA	--	0.E+00	blood	8.E-04	--	NA	8.E-04
			Chemical Total	6.E-07	--	2.E-07	--	7.E-07		9E-03	--	6E-04	1.E-02
		Exposure Point Total						7.E-07					1.E-02
	Exposure Medium Total							7.E-07					1.E-02
Sediment Total								7.E-07					1.E-02

Table 9.15.RME
Summary of Receptor Risks and Hazards for COPCs
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain Area 2
Receptor Population: Wildlife Worker and Hunter
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Water	Surface Water	DePue Lake Surface Water Lake-wide	Cadmium	NA	--	NA	--	0.E+00	kidney	2.E-04	--	2.E-03	2.E-03
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	6.E-04	--	3.E-03	4.E-03
			Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chloride	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Nitrate as N	NA	--	NA	--	0.E+00	blood	1.E-04	--	NA	1.E-04
			Phosphorus	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Sulfate	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		9E-04	--	5E-03	6.E-03
		Exposure Point Total						0.E+00					6.E-03
	Exposure Medium Total							0.E+00					6.E-03
Surface Water Total								0.E+00					6.E-03
Receptor Total							Receptor Risk Total	2.E-06				Receptor HI Total	4.E-02

Total Immune HI Across All Media =	0.E+00
Total Body Weight HI Across All Media =	0.E+00
Total Skin HI Across All Media =	8.E-03
Total Kidney HI Across All Media =	5.E-03
Total Liver HI Across All Media =	7.E-06
Total CNS HI Across All Media =	5.E-03
Total Development HI Across All Media =	0.E+00
Total Blood HI Across All Media =	1.E-03

Table 9.15.CTE

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain Area 2
Receptor Population: Wildlife Worker and Hunter
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface and Subsurface Soil	Surface and Subsurface Soil	Floodplain Surface and Subsurface Soil Floodplain Area 2	Benzo(a)anthracene	1.E-09	--	6.E-10	--	2.E-09	NA	NA	--	NA	0.E+00
			Benzo(a)pyrene	2.E-08	--	7.E-09	--	2.E-08	NA	NA	--	NA	0.E+00
			Benzo(b)fluoranthene	2.E-09	--	7.E-10	--	2.E-09	NA	NA	--	NA	0.E+00
			Benzo(k)fluoranthene	2.E-10	--	7.E-11	--	2.E-10	NA	NA	--	NA	0.E+00
			Chrysene	2.E-11	--	8.E-12	--	3.E-11	NA	NA	--	NA	0.E+00
			Indeno(1,2,3-cd)pyrene	1.E-09	--	6.E-10	--	2.E-09	NA	NA	--	NA	0.E+00
			Arsenic	1.E-07	--	2.E-08	--	2.E-07	skin	2.E-03	--	2.E-03	4.E-03
			Barium	NA	--	NA	--	0.E+00	kidney	3.E-04	--	NA	3.E-04
			Cadmium*	NA	--	NA	--	0.E+00	kidney	9.E-04	--	2.E-04	1.E-03
			Chromium*	NA	--	NA	--	0.E+00	none reported	2.E-03	--	NA	2.E-03
			Cobalt*	NA	--	NA	--	0.E+00	NA	3.E-03	--	NA	3.E-03
			Dieldrin*	5.E-10	--	NA	--	5.E-10	liver	5.E-06	--	NA	5.E-06
			Iron*	NA	--	NA	--	0.E+00	NA	4.E-03	--	NA	4.E-03
			Lead*	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	6.E-04	--	NA	6.E-04
			Chemical Total	2.E-07	--	3.E-08	--	2.E-07		1E-02	--	2E-03	2.E-02
		Exposure Point Total						2.E-07					2.E-02
	Exposure Medium Total							2.E-07					2.E-02
Sediment Total								2.E-07					2.E-02
Sediment	Sediment	DePue Lake Surface and Subsurface Sediment Sediment Area 2	Benzo(a)anthracene	8.E-10	--	5.E-10	--	1.E-09	NA	NA	--	NA	0.E+00
			Benzo(a)pyrene	1.E-08	--	6.E-09	--	2.E-08	NA	NA	--	NA	0.E+00
			Benzo(b)fluoranthene	2.E-09	--	1.E-09	--	3.E-09	NA	NA	--	NA	0.E+00
			Benzo(g,h,i)perylene	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Benzo(k)fluoranthene	1.E-10	--	8.E-11	--	2.E-10	NA	NA	--	NA	0.E+00
			Chrysene	1.E-11	--	7.E-12	--	2.E-11	NA	NA	--	NA	0.E+00
			Dibenz(a,h)anthracene	3.E-09	--	2.E-09	--	4.E-09	NA	NA	--	NA	0.E+00
			Indeno(1,2,3-cd)pyrene	1.E-09	--	6.E-10	--	2.E-09	NA	NA	--	NA	0.E+00
			Arsenic	5.E-08	--	1.E-08	--	7.E-08	skin	9.E-04	--	2.E-04	1.E-03
			Barium	NA	--	NA	--	0.E+00	kidney	9.E-05	--	NA	9.E-05
			Iron	NA	--	NA	--	0.E+00	NA	2.E-03	--	NA	2.E-03
			Manganese	NA	--	NA	--	0.E+00	CNS	3.E-04	--	NA	3.E-04
			Zinc	NA	--	NA	--	0.E+00	blood	3.E-04	--	NA	3.E-04
			Chemical Total	7.E-08	--	2.E-08	--	9.E-08		3E-03	--	2E-04	4.E-03
		Exposure Point Total						9.E-08					4.E-03
	Exposure Medium Total							9.E-08					4.E-03
Sediment Total								9.E-08					4.E-03

Table 9.15.CTE

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain Area 2
Receptor Population: Wildlife Worker and Hunter
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Water	Surface Water	DePue Lake Surface Water Lake-wide	Cadmium	NA	--	NA	--	0.E+00	kidney	1.E-04	--	1.E-03	1.E-03
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	4.E-04	--	2.E-03	3.E-03
			Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chloride	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Nitrate as N	NA	--	NA	--	0.E+00	blood	1.E-04	--	NA	1.E-04
			Phosphorus	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Sulfate	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		7E-04	--	4E-03	4.E-03
		Exposure Point Total						0.E+00					4.E-03
	Exposure Medium Total							0.E+00					4.E-03
Surface Water Total								0.E+00					4.E-03
Receptor Total							Receptor Risk Total	3.E-07				Receptor HI Total	2.E-02

Total Immune HI Across All Media =	0.E+00
Total Body Weight HI Across All Media =	0.E+00
Total Skin HI Across All Media =	5.E-03
Total Kidney HI Across All Media =	3.E-03
Total Liver HI Across All Media =	5.E-06
Total CNS HI Across All Media =	4.E-03
Total Development HI Across All Media =	0.E+00
Total Blood HI Across All Media =	4.E-04

Table 9.16.RME

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain Area 2/3
Receptor Population: Farmer
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface and Subsurface Soil	Surface and Subsurface Soil	Surface & Subsurface Soil	Chromium*	NA	9.E-07	NA	--	9.E-07	none reported	5.E-03	3.E-04	NA	5.E-03
		Floodplain Area 2/3	Chemical Total	0.E+00	9.E-07	0.E+00	--	9.E-07		5E-03	3E-04	0E+00	5.E-03
		Exposure Point Total						9.E-07					5.E-03
	Exposure Medium Total							9.E-07					5.E-03
Soil Total								9.E-07					5.E-03
Receptor Total							Receptor Risk Total	9.E-07				Receptor HI Total	5.E-03

Total Immune HI Across All Media =	0.E+00
Total Body Weight HI Across All Media =	0.E+00
Total Skin HI Across All Media =	0.E+00
Total Kidney HI Across All Media =	0.E+00
Total Liver HI Across All Media =	0.E+00
Total CNS HI Across All Media =	0.E+00
Total Development HI Across All Media =	0.E+00
Total Blood HI Across All Media =	0.E+00

Table 9.16.CTE

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Floodplain Area 2/3
Receptor Population: Farmer
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface and Subsurface Soil	Surface and Subsurface Soil	Surface & Subsurface Soil	Chromium*	NA	4.E-08	NA		4.E-08	none reported	6.E-04	4.E-05	NA	7.E-04
		Floodplain Area 2/3	Chemical Total	0.E+00	4.E-08	0.E+00	--	4.E-08		6E-04	4E-05	0.E+00	7.E-04
		Exposure Point Total						4.E-08					7.E-04
	Exposure Medium Total							4.E-08					7.E-04
Soil Total								4.E-08					7.E-04
Receptor Total							Receptor Risk Total	4.E-08				Receptor HI Total	7.E-04

Total Immune HI Across All Media =	0.E+00
Total Body Weight HI Across All Media =	0.E+00
Total Skin HI Across All Media =	0.E+00
Total Kidney HI Across All Media =	0.E+00
Total Liver HI Across All Media =	0.E+00
Total CNS HI Across All Media =	0.E+00
Total Development HI Across All Media =	0.E+00
Total Blood HI Across All Media =	0.E+00

Table 9.17.RME

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Lake-Wide
Receptor Population: Lake Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Sediment	Sediment	DePue Lake Surface Sediment Lake-wide (Swimming Scenario)	Benzo(a)anthracene	2.E-08	--	1.E-07	--	1.E-07	NA	NA	--	NA	0.E+00
			Benzo(a)pyrene	2.E-06	--	1.E-05	--	1.E-05	NA	NA	--	NA	0.E+00
			Benzo(b)fluoranthene	3.E-08	--	1.E-07	--	2.E-07	NA	NA	--	NA	0.E+00
			Benzo(g,h,i)perylene	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Benzo(k)fluoranthene	2.E-08	--	9.E-08	--	1.E-07	NA	NA	--	NA	0.E+00
			Chrysene	2.E-09	--	1.E-08	--	1.E-08	NA	NA	--	NA	0.E+00
			Dibenz(a,h)anthracene	4.E-07	--	2.E-06	--	2.E-06	NA	NA	--	NA	0.E+00
			Indeno(1,2,3-cd)pyrene	1.E-07	--	5.E-07	--	6.E-07	NA	NA	--	NA	0.E+00
			Naphthalene	NA	--	NA	--	0.E+00	body weight	2.E-05	--	8.E-05	1.E-04
			Gamma-BHC (Lindane)	3.E-06	--	4.E-06	--	7.E-06	liver, kidney	2.E-02	--	4.E-02	6.E-02
			Arsenic	1.E-06	--	2.E-06	--	3.E-06	skin	8.E-03	--	1.E-02	2.E-02
			Barium	NA	--	NA	--	0.E+00	kidney	5.E-04	--	NA	5.E-04
			Cadmium	NA	--	NA	--	0.E+00	kidney	2.E-02	--	3.E-02	5.E-02
			Cobalt	NA	--	NA	--	0.E+00	NA	1.E-02	--	NA	1.E-02
			Copper	NA	--	NA	--	0.E+00	NA	4.E-03	--	NA	4.E-03
			Iron	NA	--	NA	--	0.E+00	NA	9.E-03	--	NA	9.E-03
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	1.E-03	--	NA	1.E-03
			Mercury	NA	--	NA	--	0.E+00	development	6.E-03	--	NA	6.E-03
			Zinc	NA	--	NA	--	0.E+00	blood	5.E-03	--	NA	5.E-03
			Chemical Total	7.E-06	--	2.E-05	--	3.E-05		9E-02	--	8E-02	2.E-01
		Exposure Point Total						3.E-05					2.E-01
	Exposure Medium Total							3.E-05					2.E-01
Sediment Total								3.E-05					2.E-01
Surface Water	Surface Water	DePue Lake Surface Water Lake-wide (Swimming Scenario)	Cadmium	NA	--	NA	--	0.E+00	kidney	2.E-04	--	1.E-02	1.E-02
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	4.E-04	--	2.E-02	2.E-02
			Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chloride	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Nitrate as N	NA	--	NA	--	0.E+00	blood	1.E-04	--	NA	1.E-04
			Phosphorus	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Sulfate	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		7E-04	--	3E-02	3.E-02
		Exposure Point Total						0.E+00					3.E-02
	Exposure Medium Total							0.E+00					3.E-02
Surface Water Total								0.E+00					3.E-02
Receptor Total							Receptor Risk Total	3.E-05				Receptor HI Total	2.E-01

Total Immune HI Across All Media =	0.E+00
Total Body Weight HI Across All Media =	1.E-04
Total Skin HI Across All Media =	2.E-02
Total Kidney HI Across All Media =	1.E-01
Total Liver HI Across All Media =	6.E-02
Total CNS HI Across All Media =	2.E-02
Total Development HI Across All Media =	6.E-03
Total Blood HI Across All Media =	5.E-03

Table 9.17.CTE

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Lake-Wide
Receptor Population: Lake Recreational User
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Sediment	Sediment	DePue Lake Surface Sediment Lake-wide (Swimming Scenario)	Benzo(a)anthracene	3.E-09	--	6.E-09	--	1.E-08	NA	NA	--	NA	0.E+00
			Benzo(a)pyrene	3.E-07	--	5.E-07	--	8.E-07	NA	NA	--	NA	0.E+00
			Benzo(b)fluoranthene	4.E-09	--	8.E-09	--	1.E-08	NA	NA	--	NA	0.E+00
			Benzo(g,h,i)perylene	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Benzo(k)fluoranthene	3.E-09	--	5.E-09	--	8.E-09	NA	NA	--	NA	0.E+00
			Chrysene	3.E-10	--	6.E-10	--	9.E-10	NA	NA	--	NA	0.E+00
			Dibenz(a,h)anthracene	5.E-08	--	9.E-08	--	1.E-07	NA	NA	--	NA	0.E+00
			Indeno(1,2,3-cd)pyrene	2.E-08	--	3.E-08	--	4.E-08	NA	NA	--	NA	0.E+00
			Naphthalene	NA	--	NA	--	0.E+00	body weight	4.E-06	--	8.E-06	1.E-05
			Gamma-BHC (Lindane)	3.E-07	--	2.E-07	--	4.E-07	liver, kidney	6.E-03	--	4.E-03	1.E-02
			Arsenic	1.E-07	--	8.E-08	--	2.E-07	skin	2.E-03	--	1.E-03	3.E-03
			Barium	NA	--	NA	--	0.E+00	kidney	1.E-04	--	NA	1.E-04
			Cadmium	NA	--	NA	--	0.E+00	kidney	5.E-03	--	3.E-03	9.E-03
			Cobalt	NA	--	NA	--	0.E+00	NA	4.E-03	--	NA	4.E-03
			Copper	NA	--	NA	--	0.E+00	NA	1.E-03	--	NA	1.E-03
			Iron	NA	--	NA	--	0.E+00	NA	2.E-03	--	NA	2.E-03
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	3.E-04	--	NA	3.E-04
			Mercury	NA	--	NA	--	0.E+00	development	1.E-03	--	NA	1.E-03
			Zinc	NA	--	NA	--	0.E+00	blood	1.E-03	--	NA	1.E-03
			Chemical Total	7.E-07	--	9.E-07	--	2.E-06		2E-02	--	8E-03	3.E-02
		Exposure Point Total						2.E-06					3.E-02
	Exposure Medium Total							2.E-06					3.E-02
Sediment Total								2.E-06					3.E-02
Surface Water	Surface Water	DePue Lake Surface Water Lake-wide (Swimming Scenario)	Cadmium	NA	--	NA	--	0.E+00	kidney	8.E-05	--	5.E-03	5.E-03
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	2.E-04	--	1.E-02	1.E-02
			Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chloride	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Nitrate as N	NA	--	NA	--	0.E+00	blood	5.E-05		NA	5.E-05
			Phosphorus	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Sulfate	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		3E-04	--	2E-02	2.E-02
		Exposure Point Total						0.E+00					2.E-02
	Exposure Medium Total							0.E+00					2.E-02
Surface Water Total								0.E+00					2.E-02
Receptor Total							Receptor Risk Total	2.E-06				Receptor HI Total	5.E-02

Total Immune HI Across All Media =	0.E+00
Total Body Weight HI Across All Media =	1.E-05
Total Skin HI Across All Media =	3.E-03
Total Kidney HI Across All Media =	2.E-02
Total Liver HI Across All Media =	1.E-02
Total CNS HI Across All Media =	1.E-02
Total Development HI Across All Media =	1.E-03
Total Blood HI Across All Media =	1.E-03

Table 9.18.RME

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Lake-Wide
Receptor Population: Lake Recreational User
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Sediment	Sediment	DePue Lake Surface Sediment Lake-wide (Swimming Scenario)	Benzo(a)anthracene	2.E-07	--	2.E-07	--	3.E-07	NA	NA	--	NA	0.E+00
			Benzo(a)pyrene	2.E-05	--	1.E-05	--	3.E-05	NA	NA	--	NA	0.E+00
			Benzo(b)fluoranthene	2.E-07	--	2.E-07	--	4.E-07	NA	NA	--	NA	0.E+00
			Benzo(g,h,i)perylene	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Benzo(k)fluoranthene	1.E-07	--	1.E-07	--	3.E-07	NA	NA	--	NA	0.E+00
			Chrysene	2.E-08	--	1.E-08	--	3.E-08	NA	NA	--	NA	0.E+00
			Dibenz(a,h)anthracene	3.E-06	--	2.E-06	--	5.E-06	NA	NA	--	NA	0.E+00
			Indeno(1,2,3-cd)pyrene	8.E-07	--	7.E-07	--	1.E-06	NA	NA	--	NA	0.E+00
			Naphthalene	NA	--	NA	--	0.E+00	body weight	2.E-04	--	1.E-04	3.E-04
			Gamma-BHC (Lindane)	7.E-06	--	2.E-06	--	8.E-06	liver, kidney	2.E-01	--	6.E-02	3.E-01
			Arsenic	3.E-06	--	1.E-06	--	4.E-06	skin	8.E-02	--	2.E-02	1.E-01
			Barium	NA	--	NA	--	0.E+00	kidney	5.E-03	--	NA	5.E-03
			Cadmium	NA	--	NA	--	0.E+00	kidney	2.E-01	--	5.E-02	3.E-01
			Cobalt	NA	--	NA	--	0.E+00	NA	1.E-01	--	NA	1.E-01
			Copper	NA	--	NA	--	0.E+00	NA	4.E-02	--	NA	4.E-02
			Iron	NA	--	NA	--	0.E+00	NA	8.E-02	--	NA	8.E-02
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	1.E-02	--	NA	1.E-02
			Mercury	NA	--	NA	--	0.E+00	development	5.E-02	--	NA	5.E-02
			Zinc	NA	--	NA	--	0.E+00	blood	5.E-02	--	NA	5.E-02
			Chemical Total	3.E-05	--	2.E-05	--	5.E-05		9E-01	--	1E-01	1.E+00
		Exposure Point Total						5.E-05					1.E+00
	Exposure Medium Total							5.E-05					1.E+00
Sediment Total								5.E-05					1.E+00
Surface Water	Surface Water	DePue Lake Surface Water Lake-wide (Swimming Scenario)	Cadmium	NA	--	NA	--	0.E+00	kidney	7.E-04	--	2.E-02	2.E-02
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	2.E-03	--	3.E-02	4.E-02
			Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chloride	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Nitrate as N	NA	--	NA	--	0.E+00	blood	5.E-04	--	NA	5.E-04
			Phosphorus	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Sulfate	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		3E-03	--	5E-02	5.E-02
		Exposure Point Total						0.E+00					5.E-02
	Exposure Medium Total							0.E+00					5.E-02
Surface Water Total								0.E+00					5.E-02
Receptor Total							Receptor Risk Total	5.E-05				Receptor HI Total	1.E+00

Total Immune HI Across All Media =	0.E+00
Total Body Weight HI Across All Media =	3.E-04
Total Skin HI Across All Media =	1.E-01
Total Kidney HI Across All Media =	6.E-01
Total Liver HI Across All Media =	3.E-01
Total CNS HI Across All Media =	5.E-02
Total Development HI Across All Media =	5.E-02
Total Blood HI Across All Media =	5.E-02

Table 9.18.CTE

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Lake-Wide
Receptor Population: Lake Recreational User
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Sediment	Sediment	DePue Lake Surface Sediment Lake-wide (Swimming Scenario)	Benzo(a)anthracene	4.E-08	--	2.E-08	--	6.E-08	NA	NA	--	NA	0.E+00
			Benzo(a)pyrene	4.E-06	--	1.E-06	--	5.E-06	NA	NA	--	NA	0.E+00
			Benzo(b)fluoranthene	6.E-08	--	2.E-08	--	8.E-08	NA	NA	--	NA	0.E+00
			Benzo(g,h,i)perylene	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Benzo(k)fluoranthene	3.E-08	--	1.E-08	--	5.E-08	NA	NA	--	NA	0.E+00
			Chrysene	4.E-09	--	1.E-09	--	5.E-09	NA	NA	--	NA	0.E+00
			Dibenz(a,h)anthracene	6.E-07	--	2.E-07	--	8.E-07	NA	NA	--	NA	0.E+00
			Indeno(1,2,3-cd)pyrene	2.E-07	--	7.E-08	--	3.E-07	NA	NA	--	NA	0.E+00
			Naphthalene	NA	--	NA	--	0.E+00	body weight	4.E-05	--	1.E-05	6.E-05
			Gamma-BHC (Lindane)	2.E-06	--	2.E-07	--	2.E-06	liver, kidney	6.E-02	--	6.E-03	6.E-02
			Arsenic	7.E-07	--	1.E-07	--	8.E-07	skin	2.E-02	--	2.E-03	2.E-02
			Barium	NA	--	NA	--	0.E+00	kidney	1.E-03	--	NA	1.E-03
			Cadmium	NA	--	NA	--	0.E+00	kidney	5.E-02	--	5.E-03	6.E-02
			Cobalt	NA	--	NA	--	0.E+00	NA	3.E-02	--	NA	3.E-02
			Copper	NA	--	NA	--	0.E+00	NA	9.E-03	--	NA	9.E-03
			Iron	NA	--	NA	--	0.E+00	NA	2.E-02	--	NA	2.E-02
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	3.E-03	--	NA	3.E-03
			Mercury	NA	--	NA	--	0.E+00	development	1.E-02	--	NA	1.E-02
			Zinc	NA	--	NA	--	0.E+00	blood	1.E-02	--	NA	1.E-02
			Chemical Total	7.E-06	--	2.E-06	--	9.E-06		2E-01	--	1E-02	2.E-01
		Exposure Point Total						9.E-06					2.E-01
	Exposure Medium Total							9.E-06					2.E-01
Sediment Total								9.E-06					2.E-01
Surface Water	Surface Water	DePue Lake Surface Water Lake-wide (Swimming Scenario)	Cadmium	NA	--	NA	--	0.E+00	kidney	4.E-04	--	9.E-03	9.E-03
			Lead	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Manganese	NA	--	NA	--	0.E+00	CNS	1.E-03	--	2.E-02	2.E-02
			Ammonia	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chloride	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Nitrate as N	NA	--	NA	--	0.E+00	blood	2.E-04	--	NA	2.E-04
			Phosphorus	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Sulfate	NA	--	NA	--	0.E+00	NA	NA	--	NA	0.E+00
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		2E-03	--	3E-02	3.E-02
		Exposure Point Total						0.E+00					3.E-02
	Exposure Medium Total							0.E+00					3.E-02
Surface Water Total								0.E+00					3.E-02
Receptor Total							Receptor Risk Total	9.E-06				Receptor HI Total	3.E-01

Total Immune HI Across All Media =	0.E+00
Total Body Weight HI Across All Media =	6.E-05
Total Skin HI Across All Media =	2.E-02
Total Kidney HI Across All Media =	1.E-01
Total Liver HI Across All Media =	6.E-02
Total CNS HI Across All Media =	2.E-02
Total Development HI Across All Media =	1.E-02
Total Blood HI Across All Media =	1.E-02

Table 9.18A.RME

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Lake-Wide
Receptor Population: Lake Recreational User
Receptor Age: Adult + Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Sediment	Sediment	DePue Lake Surface Sediment Lake-wide (Swimming Scenario)	Benzo(a)anthracene	2.E-07	--	3.E-07	--	5.E-07	--	--	--	--	--
			Benzo(a)pyrene	2.E-05	--	2.E-05	--	4.E-05	--	--	--	--	--
			Benzo(b)fluoranthene	3.E-07	--	3.E-07	--	6.E-07	--	--	--	--	--
			Benzo(g,h,i)perylene	NA	--	NA	--	0.E+00	--	--	--	--	--
			Benzo(k)fluoranthene	2.E-07	--	2.E-07	--	4.E-07	--	--	--	--	--
			Chrysene	2.E-08	--	2.E-08	--	4.E-08	--	--	--	--	--
			Dibenz(a,h)anthracene	3.E-06	--	4.E-06	--	7.E-06	--	--	--	--	--
			Indeno(1,2,3-cd)pyrene	9.E-07	--	1.E-06	--	2.E-06	--	--	--	--	--
			Naphthalene	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Gamma-BHC (Lindane)	9.E-06	--	6.E-06	--	2.E-05	--	--	--	--	--
			Arsenic	4.E-06	--	3.E-06	--	7.E-06	--	--	--	--	--
			Barium	NA	--	NA	--	0.E+00	--	--	--	--	--
			Cadmium	NA	--	NA	--	0.E+00	--	--	--	--	--
			Cobalt	NA	--	NA	--	0.E+00	--	--	--	--	--
			Copper	NA	--	NA	--	0.E+00	--	--	--	--	--
			Iron	NA	--	NA	--	0.E+00	--	--	--	--	--
			Lead	NA	--	NA	--	0.E+00	--	--	--	--	--
			Manganese	NA	--	NA	--	0.E+00	--	--	--	--	--
			Mercury	NA	--	NA	--	0.E+00	--	--	--	--	--
			Zinc	NA	--	NA	--	0.E+00	--	--	--	--	--
			Chemical Total	4.E-05	--	4.E-05	--	7.E-05		--	--	--	--
		Exposure Point Total						7.E-05					--
	Exposure Medium Total							7.E-05					--
Sediment Total								7.E-05					--
Surface Water	Surface Water	DePue Lake Surface Water Lake-wide (Swimming Scenario)	Cadmium	NA	--	NA	--	0.E+00	--	--	--	--	--
			Lead	NA	--	NA	--	0.E+00	--	--	--	--	--
			Manganese	NA	--	NA	--	0.E+00	--	--	--	--	--
			Ammonia	NA	--	NA	--	0.E+00	--	--	--	--	--
			Chloride	NA	--	NA	--	0.E+00	--	--	--	--	--
			Nitrate as N	NA	--	NA	--	0.E+00	--	--	--	--	--
			Phosphorus	NA	--	NA	--	0.E+00	--	--	--	--	--
			Sulfate	NA	--	NA	--	0.E+00	--	--	--	--	--
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		--	--	--	--
		Exposure Point Total						0.E+00					--
	Exposure Medium Total							0.E+00					--
Surface Water Total								0.E+00					--
Receptor Total							Receptor Risk Total	7.E-05					--

-- = Non-cancer hazards are evaluated separately for adult and child.

Table 9.18A.CTE

Summary of Receptor Risks and Hazards for COPCs

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Lake-Wide
Receptor Population: Lake Recreational User
Receptor Age: Adult + Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Sediment	Sediment	DePue Lake Surface Sediment Lake-wide (Swimming Scenario)	Benzo(a)anthracene	5.E-08	--	2.E-08	--	7.E-08	--	--	--	--	--
			Benzo(a)pyrene	4.E-06	--	2.E-06	--	6.E-06	--	--	--	--	--
			Benzo(b)fluoranthene	6.E-08	--	3.E-08	--	9.E-08	--	--	--	--	--
			Benzo(g,h,i)perylene	NA	--	NA	--	0.E+00	--	--	--	--	--
			Benzo(k)fluoranthene	4.E-08	--	2.E-08	--	5.E-08	--	--	--	--	--
			Chrysene	4.E-09	--	2.E-09	--	6.E-09	--	--	--	--	--
			Dibenz(a,h)anthracene	7.E-07	--	3.E-07	--	1.E-06	--	--	--	--	--
			Indeno(1,2,3-cd)pyrene	2.E-07	--	1.E-07	--	3.E-07	--	--	--	--	--
			Naphthalene	0.E+00	--	0.E+00	--	0.E+00	--	--	--	--	--
			Gamma-BHC (Lindane)	2.E-06	--	3.E-07	--	2.E-06	--	--	--	--	--
			Arsenic	8.E-07	--	2.E-07	--	1.E-06	--	--	--	--	--
			Barium	NA	--	NA	--	0.E+00	--	--	--	--	--
			Cadmium	NA	--	NA	--	0.E+00	--	--	--	--	--
			Cobalt	NA	--	NA	--	0.E+00	--	--	--	--	--
			Copper	NA	--	NA	--	0.E+00	--	--	--	--	--
			Iron	NA	--	NA	--	0.E+00	--	--	--	--	--
			Lead	NA	--	NA	--	0.E+00	--	--	--	--	--
			Manganese	NA	--	NA	--	0.E+00	--	--	--	--	--
			Mercury	NA	--	NA	--	0.E+00	--	--	--	--	--
			Zinc	NA	--	NA	--	0.E+00	--	--	--	--	--
			Chemical Total	8.E-06	--	3.E-06	--	1.E-05		--	--	--	--
		Exposure Point Total						1.E-05					--
	Exposure Medium Total							1.E-05					--
Sediment Total								1.E-05					--
Surface Water	Surface Water	DePue Lake Surface Water Lake-wide (Swimming Scenario)	Cadmium	NA	--	NA	--	0.E+00	--	--	--	--	--
			Lead	NA	--	NA	--	0.E+00	--	--	--	--	--
			Manganese	NA	--	NA	--	0.E+00	--	--	--	--	--
			Ammonia	NA	--	NA	--	0.E+00	--	--	--	--	--
			Chloride	NA	--	NA	--	0.E+00	--	--	--	--	--
			Nitrate as N	NA	--	NA	--	0.E+00	--	--	--	--	--
			Phosphorus	NA	--	NA	--	0.E+00	--	--	--	--	--
			Sulfate	NA	--	NA	--	0.E+00	--	--	--	--	--
			Chemical Total	0.E+00	--	0.E+00	--	0.E+00		--	--	--	--
		Exposure Point Total						0.E+00					--
	Exposure Medium Total							0.E+00					--
Surface Water Total								0.E+00					--
Receptor Total							Receptor Risk Total	1.E-05					--

-- = Non-cancer hazards are evaluated separately for adult and child.

Table 10

Summary of Receptor-Specific Risks and Hazards

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Receptor	Exposure Media	Exposure Route	RME Cancer Risks	RME Non-Cancer Hazards	CTE Cancer Risks	CTE Non-Cancer Hazards
Trespasser, Adolescent	Floodplain surface soil (Floodplain Area 1B)	Ingestion, dermal contact	1.E-05	4.E-01	2.E-06	1.E-01
	Groundwater seep sediment (Floodplain Area 1B)	Ingestion, dermal contact	2.E-06	4.E-01	3.E-07	8.E-02
	Groundwater seep surface water (Floodplain Area 1B)	Ingestion, dermal contact	0.E+00	3.E-02	0.E+00	1.E-02
		TOTAL:	**1.E-05**	**8.E-01**	**2.E-06**	**2.E-01**
Trespasser, Adolescent	Floodplain surface soil (Floodplain Area 1C)	Ingestion, dermal contact	8.E-07	3.E-01	1.E-07	2.E-02
	Groundwater seep surface water (Floodplain Area 1C)	Ingestion, dermal contact	0.E+00	3.E-02	0.E+00	2.E-02
		TOTAL:	**8.E-07**	**3.E-01**	**1.E-07**	**4.E-02**
Trespasser, Adolescent	Floodplain surface soil (Floodplain Area 2)	Ingestion, dermal contact	**5.E-07**	**2.E-02**	**9.E-08**	**6.E-03**
Trespasser, Adolescent	Floodplain surface soil (Floodplain Area 3)	Ingestion, dermal contact	**2.E-07**	**3.E-03**	**3.E-08**	**8.E-04**
Village Park Recreational User, Adult	DePue Lake surficial sediment (Sediment Area 1A)	Ingestion, dermal contact	3.E-06	8.E-03	3.E-07	2.E-03
(Wading Scenario)	DePue Lake surface water (Eastern portion of lake)	Ingestion, dermal contact	0.E+00	4.E-03	0.E+00	2.E-03
	Groundwater seep sediment (Floodplain Area 1A)	Ingestion, dermal contact	3.E-07	2.E-03	2.E-08	4.E-04
	Groundwater seep surface water (Floodplain Area 1A)	Ingestion, dermal contact	0.E+00	3.E-03	0.E+00	1.E-03
		TOTAL:	**4.E-06**	**2.E-02**	**3.E-07**	**6.E-03**
Village Park Recreational User, Child	DePue Lake surficial sediment (Sediment Area 1A)	Ingestion, dermal contact	1.E-05	5.E-02	2.E-06	1.E-02
(Wading Scenario)	DePue Lake surface water (Eastern portion of lake)	Ingestion, dermal contact	0.E+00	1.E-02	0.E+00	5.E-03
	Groundwater seep sediment (Floodplain Area 1A)	Ingestion, dermal contact	5.E-07	1.E-02	1.E-07	3.E-03
	Groundwater seep surface water (Floodplain Area 1A)	Ingestion, dermal contact	0.E+00	6.E-03	0.E+00	3.E-03
		TOTAL:	**1.E-05**	**8.E-02**	**2.E-06**	**2.E-02**
Village Park Recreational User, Adult + Child	DePue Lake surficial sediment (Sediment Area 1A)	Ingestion, dermal contact	2.E-05	--	3.E-06	--
(Wading Scenario)	DePue Lake surface water (Eastern portion of lake)	Ingestion, dermal contact	0.E+00	--	0.E+00	--
	Groundwater seep sediment (Floodplain Area 1A)	Ingestion, dermal contact	8.E-07	--	1.E-07	--
	Groundwater seep surface water (Floodplain Area 1A)	Ingestion, dermal contact	0.E+00	--	0.E+00	--
		TOTAL:	**2.E-05**	**--**	**3.E-06**	**--**
Village Park Recreational User, Adult	DePue Lake surficial sediment (Sediment Area 1A)	Ingestion, dermal contact	8.E-06	1.E-02	5.E-07	2.E-03
(Swimming Scenario)	DePue Lake surface water (Eastern portion of lake)	Ingestion, dermal contact	0.E+00	1.E-02	0.E+00	7.E-03
	Groundwater seep sediment (Floodplain Area 1A)	Ingestion, dermal contact	3.E-07	2.E-03	2.E-08	4.E-04
	Groundwater seep surface water (Floodplain Area 1A)	Ingestion, dermal contact	0.E+00	3.E-03	0.E+00	1.E-03
		TOTAL:	**8.E-06**	**3.E-02**	**5.E-07**	**1.E-02**
Village Park Recreational User, Child	DePue Lake surficial sediment (Sediment Area 1A)	Ingestion, dermal contact	2.E-05	6.E-02	3.E-06	1.E-02
(Swimming Scenario)	DePue Lake surface water (Eastern portion of lake)	Ingestion, dermal contact	0.E+00	2.E-02	0.E+00	1.E-02
	Groundwater seep sediment (Floodplain Area 1A)	Ingestion, dermal contact	5.E-07	1.E-02	1.E-07	3.E-03
	Groundwater seep surface water (Floodplain Area 1A)	Ingestion, dermal contact	0.E+00	6.E-03	0.E+00	3.E-03
		TOTAL:	**2.E-05**	**1.E-01**	**3.E-06**	**3.E-02**
Village Park Recreational User, Adult + Child	DePue Lake surficial sediment (Sediment Area 1A)	Ingestion, dermal contact	3.E-05	--	4.E-06	--
(Swimming Scenario)	DePue Lake surface water (Eastern portion of lake)	Ingestion, dermal contact	0.E+00	--	0.E+00	--
	Groundwater seep sediment (Floodplain Area 1A)	Ingestion, dermal contact	8.E-07	--	1.E-07	--
	Groundwater seep surface water (Floodplain Area 1A)	Ingestion, dermal contact	0.E+00	--	0.E+00	--
		TOTAL:	**3.E-05**	**--**	**4.E-06**	**--**

Table 10

Summary of Receptor-Specific Risks and Hazards

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Receptor	Exposure Media	Exposure Route	RME Cancer Risks	RME Non-Cancer Hazards	CTE Cancer Risks	CTE Non-Cancer Hazards
Boater, Adult	DePue Lake surficial sediment (Lake-wide)	Ingestion, dermal contact	3.E-06	2.E-02	2.E-07	6.E-03
	DePue Lake surface water (Lake-wide)	Ingestion, dermal contact	0.E+00	2.E-03	0.E+00	1.E-03
	Groundwater seep sediment (Floodplain Area 1A)	Ingestion, dermal contact	2.E-07	2.E-03	2.E-08	3.E-04
	Groundwater seep surface water (Floodplain Area 1A)	Ingestion, dermal contact	0.E+00	1.E-03	0.E+00	6.E-04
		TOTAL:	**3.E-06**	**3.E-02**	**3.E-07**	**8.E-03**
Boater, Child	DePue Lake surficial sediment (Lake-wide)	Ingestion, dermal contact	8.E-06	2.E-01	2.E-06	5.E-02
	DePue Lake surface water (Lake-wide)	Ingestion, dermal contact	0.E+00	5.E-03	0.E+00	3.E-03
	Groundwater seep sediment (Floodplain Area 1A)	Ingestion, dermal contact	4.E-07	1.E-02	9.E-08	2.E-03
	Groundwater seep surface water (Floodplain Area 1A)	Ingestion, dermal contact	0.E+00	3.E-03	0.E+00	1.E-03
		TOTAL:	**8.E-06**	**2.E-01**	**2.E-06**	**6.E-02**
Boater, Adult + Child	DePue Lake surficial sediment (Lake-wide)	Ingestion, dermal contact	1.E-05	--	2.E-06	--
	DePue Lake surface water (Lake-wide)	Ingestion, dermal contact	0.E+00	--	0.E+00	--
	Groundwater seep sediment (Floodplain Area 1A)	Ingestion, dermal contact	6.E-07	--	1.E-07	--
	Groundwater seep surface water (Floodplain Area 1A)	Ingestion, dermal contact	0.E+00	--	0.E+00	--
		TOTAL:	**1.E-05**	**--**	**2.E-06**	**--**
Boat Angler, Adult	DePue Lake surficial sediment (Lake-wide)	Ingestion, dermal contact	6.E-06	5.E-02	4.E-07	9.E-03
	DePue Lake surface water (Lake-wide)	Ingestion, dermal contact	0.E+00	5.E-03	0.E+00	2.E-03
	Groundwater seep sediment (Floodplain Area 1A)	Ingestion, dermal contact	5.E-07	3.E-03	3.E-08	5.E-04
	Groundwater seep surface water (Floodplain Area 1A)	Ingestion, dermal contact	0.E+00	2.E-03	0.E+00	1.E-03
	Fish (Lake-wide)	Ingestion	NA [a]	NA [a]	NA [a]	NA [a]
		TOTAL:	**6.E-06**	**6.E-02**	**4.E-07**	**1.E-02**
Boat Angler, Child	DePue Lake surficial sediment (Lake-wide)	Ingestion, dermal contact	2.E-05	4.E-01	3.E-06	8.E-02
	DePue Lake surface water (Lake-wide)	Ingestion, dermal contact	0.E+00	1.E-02	0.E+00	4.E-03
	Groundwater seep sediment (Floodplain Area 1A)	Ingestion, dermal contact	8.E-07	2.E-02	1.E-07	4.E-03
	Groundwater seep surface water (Floodplain Area 1A)	Ingestion, dermal contact	0.E+00	5.E-03	0.E+00	2.E-03
	Fish (Lake-wide)	Ingestion	NA [a]	NA [a]	NA [a]	NA [a]
		TOTAL:	**2.E-05**	**5.E-01**	**3.E-06**	**9.E-02**
Boat Angler, Adult + Child	DePue Lake surficial sediment (Lake-wide)	Ingestion, dermal contact	2.E-05	--	3.E-06	--
	DePue Lake surface water (Lake-wide)	Ingestion, dermal contact	0.E+00	--	0.E+00	--
	Groundwater seep sediment (Floodplain Area 1A)	Ingestion, dermal contact	1.E-06	--	2.E-07	--
	Groundwater seep surface water (Floodplain Area 1A)	Ingestion, dermal contact	0.E+00	--	0.E+00	--
	Fish (Lake-wide)	Ingestion	NA [a]	--	NA [a]	--
		TOTAL:	**2.E-05**	--	**3.E-06**	--
Shoreline Angler, Adult	DePue Lake surficial sediment (Sediment Area 1A)	Ingestion, dermal contact	3.E-06	7.E-03	2.E-07	1.E-03
	DePue Lake surface water (Eastern portion of lake)	Ingestion, dermal contact	0.E+00	4.E-03	0.E+00	2.E-03
	Groundwater seep sediment (Floodplain Area 1A)	Ingestion, dermal contact	3.E-07	2.E-03	2.E-08	3.E-04
	Groundwater seep surface water (Floodplain Area 1A)	Ingestion, dermal contact	0.E+00	2.E-03	0.E+00	1.E-03
	Fish (Lake-wide)	Ingestion	NA [a]	NA [a]	NA [a]	NA [a]
		TOTAL:	**3.E-06**	**1.E-02**	**2.E-07**	**4.E-03**

Table 10

Summary of Receptor-Specific Risks and Hazards

Baseline Human Health Risk Assessment, Operable Unit 5

DePue Lake Sediments and Floodplain, DePue, Illinois

Receptor	Exposure Media	Exposure Route	RME Cancer Risks	RME Non-Cancer Hazards	CTE Cancer Risks	CTE Non-Cancer Hazards
Shoreline Angler, Child	DePue Lake surficial sediment (Sediment Area 1A)	Ingestion, dermal contact	1.E-05	5.E-02	2.E-06	9.E-03
	DePue Lake surface water (Eastern portion of lake)	Ingestion, dermal contact	0.E+00	9.E-03	0.E+00	4.E-03
	Groundwater seep sediment (Floodplain Area 1A)	Ingestion, dermal contact	5.E-07	1.E-02	9.E-08	2.E-03
	Groundwater seep surface water (Floodplain Area 1A)	Ingestion, dermal contact	0.E+00	5.E-03	0.E+00	2.E-03
	Fish (Lake-wide)	Ingestion	NA [a]	NA [a]	NA [a]	NA [a]
		TOTAL:	**1.E-05**	**7.E-02**	**2.E-06**	**2.E-02**
Shoreline Angler, Adult + Child	DePue Lake surficial sediment (Sediment Area 1A)	Ingestion, dermal contact	1.E-05	--	2.E-06	--
	DePue Lake surface water (Eastern portion of lake)	Ingestion, dermal contact	0.E+00	--	0.E+00	--
	Groundwater seep sediment (Floodplain Area 1A)	Ingestion, dermal contact	7.E-07	--	1.E-07	--
	Groundwater seep surface water (Floodplain Area 1A)	Ingestion, dermal contact	0.E+00	--	0.E+00	--
	Fish (Lake-wide)	Ingestion	NA [a]	--	NA [a]	--
		TOTAL:	**1.E-05**	--	**2.E-06**	--
Village Park Maintenance Worker, Adult	DePue Lake surface and subsurface sediment (Sediment Area 1A)	Ingestion, dermal contact	1.E-06	7.E-03	1.E-07	2.E-03
	DePue Lake surface water (Eastern portion of lake)	Ingestion, dermal contact	0.E+00	2.E-03	0.E+00	1.E-03
	Groundwater seep sediment (Floodplain Area 1A)	Ingestion, dermal contact	2.E-07	2.E-03	2.E-08	4.E-04
	Groundwater seep surface water (Floodplain Area 1A)	Ingestion, dermal contact	0.E+00	1.E-03	0.E+00	6.E-04
		TOTAL:	**1.E-06**	**1.E-02**	**1.E-07**	**4.E-03**
Utility Maintenance Worker, Adult	Floodplain surface and subsurface soil (Floodplain Area 1B + WWTP Transect LL-5)	Ingestion, dermal contact	6.E-06	1.E-01	3.E-07	2.E-02
	DePue Lake surface and subsurface sediment (Sediment Area 1B)	Ingestion, dermal contact	2.E-07	2.E-02	2.E-08	4.E-03
	DePue Lake surface water (Eastern portion of lake)	Ingestion, dermal contact	0.E+00	4.E-04	0.E+00	2.E-04
	Groundwater seep sediment (Floodplain Area 1B)	Ingestion, dermal contact	2.E-07	2.E-02	2.E-08	6.E-03
	Groundwater seep surface water (Floodplain Area 1B)	Ingestion, dermal contact	0.E+00	6.E-04	0.E+00	3.E-04
		TOTAL:	**6.E-06**	**2.E-01**	**4.E-07**	**3.E-02**
Wildlife Workers and Hunters, Adult	Floodplain surface and subsurface soil (Floodplain Area 2)	Ingestion, dermal contact	8.E-07	2.E-02	2.E-07	2.E-02
	DePue Lake surface and subsurface sediment (Sediment Area 2)	Ingestion, dermal contact	7.E-07	1.E-02	9.E-08	4.E-03
	DePue Lake surface water (Lake-wide)	Ingestion, dermal contact	0.E+00	6.E-03	0.E+00	4.E-03
		TOTAL:	**2.E-06**	**4.E-02**	**3.E-07**	**2.E-02**
Farmer, Adult	Floodplain surface and subsurface soil (agricultural area within peninsula)	Ingestion, dermal contact, inhalation	**9.E-07**	**5.E-03**	**4.E-08**	**7.E-04**
Lake-Wide Recreational User, Adult	DePue Lake surficial sediment (Lake-Wide)	Ingestion, dermal contact	3.E-05	2.E-01	2.E-06	3.E-02
(Swimming Scenario)	DePue Lake surface water (Lake-Wide)	Ingestion, dermal contact	0.E+00	3.E-02	0.E+00	2.E-02
		TOTAL:	**3.E-05**	**2.E-01**	**2.E-06**	**5.E-02**
Lake-Wide Recreational User, Child	DePue Lake surficial sediment (Lake-Wide)	Ingestion, dermal contact	5.E-05	1.E+00	9.E-06	2.E-01
(Swimming Scenario)	DePue Lake surface water (Lake-Wide)	Ingestion, dermal contact	0.E+00	5.E-02	0.E+00	3.E-02
		TOTAL:	**5.E-05**	**1.E+00**	**9.E-06**	**3.E-01**
Lake-Wide Recreational User, Adult + Child	DePue Lake surficial sediment (Lake-Wide)	Ingestion, dermal contact	7.E-05	--	1.E-05	--
(Swimming Scenario)	DePue Lake surface water (Lake-Wide)	Ingestion, dermal contact	0.E+00	--	0.E+00	--
		TOTAL:	**7.E-05**	**--**	**1.E-05**	**--**

Notes:

[a] Lead was the only COPC for fish tissue. Lead concentrations in fish are evaluated qualitatively.

-- = Non-cancer hazards are evaluated separately for adults and children.

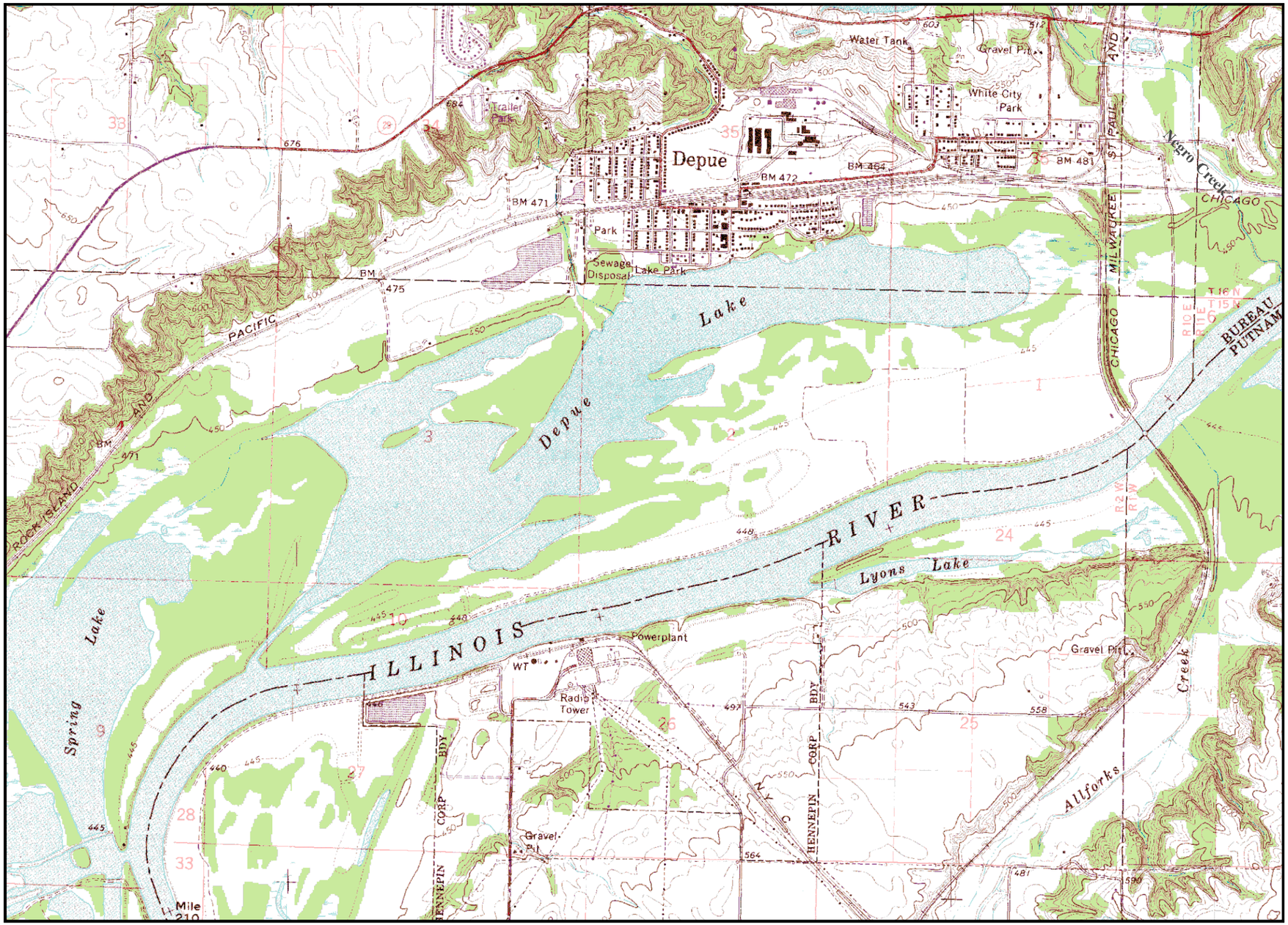
RME = Reasonable Maximum Exposure

CTE = Central Tendency Exposure

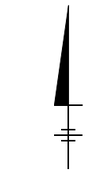
Risks and hazards greater than USEPA targets (i.e., risk of 1×10^{-4} or hazard index of 1) are highlighted.

NA = Not available

N/A = Not applicable



REFERENCE: Base Map Source USGS 7.5 Minute Quads. Series Depue, Illinois, 1993, Spring Valley, Illinois, 1979, and Princeton South, Illinois, 1979.



Area Location

2000' 0 2000'

Approximate Scale: 1" = 2000'

NEW JERSEY ZINC/MOBIL CHEMICAL SITE
DEPUE, ILLINOIS

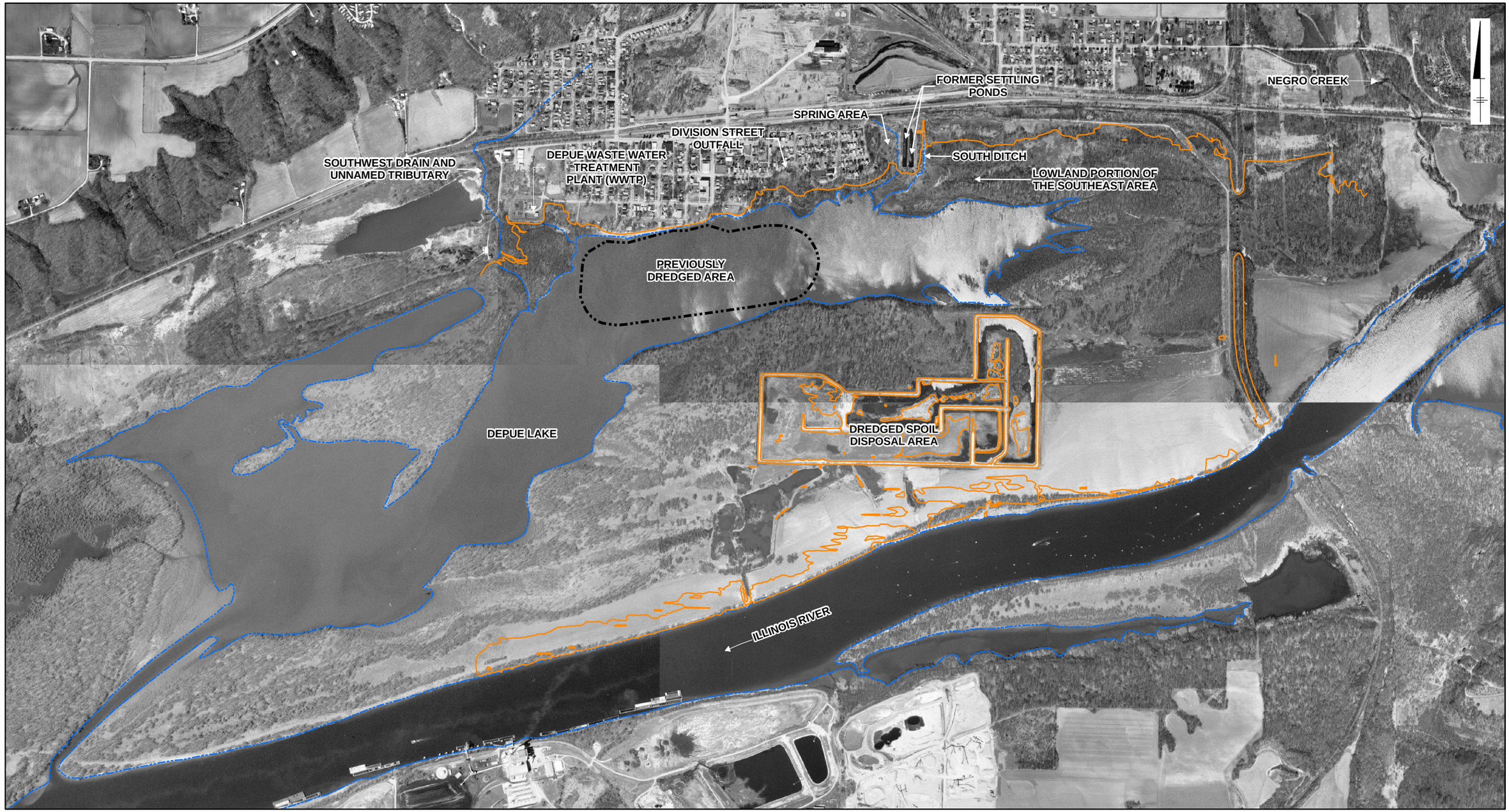
OU5 HUMAN HEALTH RISK ASSESSMENTT

SITE LOCATION MAP

ARCADIS

FIGURE
1-1

05/10/10 SYRACUSE-ENV141-DHOWES
B0085635/0003/00001/CDR/85635N01.CDR



LEGEND:

- USGS 450 FT CONTOUR
- APPROXIMATE EDGE OF WATER
- PREVIOUSLY DREDGED AREA

NOTES:

1. LAKE EXTENT DIGITIZED FROM: MARCH 27 AND APRIL 7, 1999 AERIAL PHOTOS OBTAINED FROM ILLINOIS NATURAL RESOURCES GEOSPATIAL DATA CLEARINGHOUSE. www.isgs.uiuc.edu/nsdihome
2. CONTOUR FROM QUADRANGLE www.isgs.uiuc.edu:/nsdihome AND FROM APRIL 28, 1995 AERIAL PHOTOGRAPHY. SURDEX, CHESTERFIELD, MISSOURI.

0 1,200 2,400 Feet

GRAPHIC SCALE

NEW JERSEY ZINC/MOBIL CHEMICAL SITE
DEPUE, ILLINOIS

OU5 HUMAN HEALTH RISK ASSESSMENT

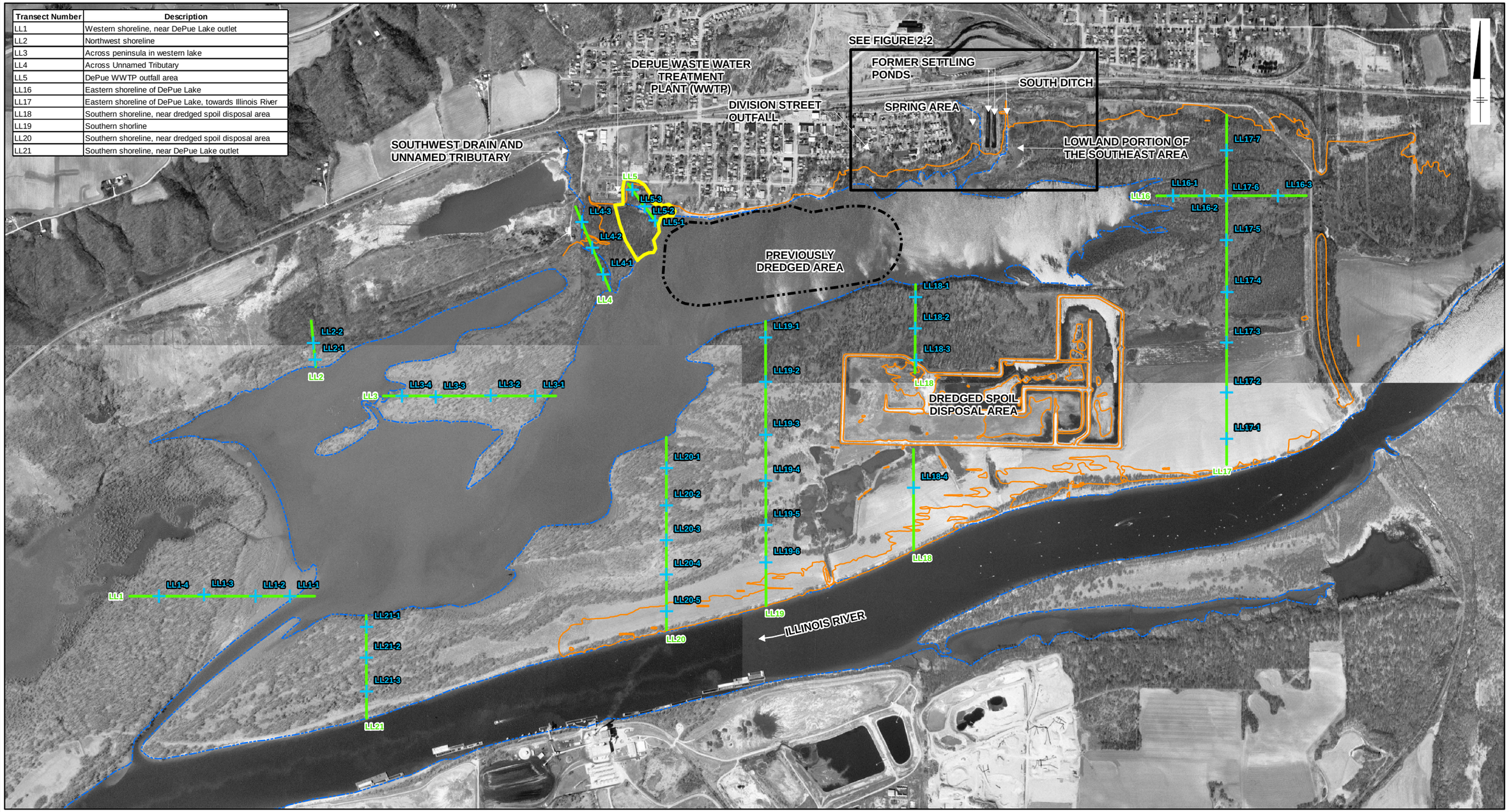
SITE PLAN

ARCADIS

FIGURE
1-2

CITY: SYR DIV/GROUP: IM DB: KES LD: PIC: PM: TM: TR:
Depue Lake (B0085635.0003.00001)
Q:\Depue_Group\Depue_Illinois\OU5HumanHealthRAImxd\SitePlan.mxd - 5/19/2010 @ 11:39:34 AM

Transect Number	Description
LL1	Western shoreline, near DePue Lake outlet
LL2	Northwest shoreline
LL3	Across peninsula in western lake
LL4	Across Unnamed Tributary
LL5	DePue WWTP outfall area
LL16	Eastern shoreline of DePue Lake
LL17	Eastern shoreline of DePue Lake, towards Illinois River
LL18	Southern shoreline, near dredged spoil disposal area
LL19	Southern shorline
LL20	Southern shoreline, near dredged spoil disposal area
LL21	Southern shoreline, near DePue Lake outlet



LEGEND:

- ACTUAL LOWLAND AREA SOIL SAMPLE LOCATION (e.g. LL1-1) (n = 44)
- LOWLAND AREA SOIL SAMPLE TRANSECT
- USGS 450 FT CONTOUR
- APPROXIMATE EDGE OF WATER
- PREVIOUSLY DREDGED AREA
- WASTEWATER TREATMENT PLANT AREA

NOTES:

1. LAKE EXTENT DIGITIZED FROM: MARCH 27 AND APRIL 7, 1999 AERIAL PHOTOS OBTAINED FROM ILLINOIS NATURAL RESOURCES GEOSPATIAL DATA CLEARINGHOUSE. www.isgs.uiuc.edu/nsdihome
2. CONTOUR FROM QUADRANGLE www.isgs.uiuc.edu:/nsdihome AND FROM APRIL 28, 1995 AERIAL PHOTOGRAPHY. SURDEX, CHESTERFIELD, MISSOURI.

0 1,200 2,400 Feet

GRAPHIC SCALE

NEW JERSEY ZINC/MOBIL CHEMICAL SITE
DEPUE, ILLINOIS

OU5 HUMAN HEALTH RISK ASSESSMENT

SOIL SAMPLING LOCATIONS

ARCADIS

FIGURE
2-1

CITY: SYR DIV/GROUP: IM DB: KES LD: PIC: PM: TM: TR:
Depue Lake (B0085635.0003.00001)
Q:\Depue_Group\Depue_Illinois\OU5HumanHealthRA\mxd\SoilSamplingLocs.mxd - 5/19/2010 @ 11:50:27 AM

Transect Number	Description
LL6	Division Street Outfall Area
LL7	Division Street Outfall Area
LL8	Division Street Outfall Area
LL9	Lowland portion of the Southeast Area
LL10	Lowland portion of the Southeast Area
LL11	Lowland portion of the Southeast Area
LL12	Lowland portion of the Southeast Area
LL13	Lowland portion of the Southeast Area
LL14	Lowland portion of the Southeast Area
LL15	Lowland portion of the Southeast Area

LEGEND:

- ACTUAL LOWLAND AREA SOIL SAMPLE LOCATION (e.g. LL6-1) (n=39)
- LOWLAND AREA SOIL SAMPLE TRANSECT
- USGS 450 FT CONTOUR
- APPROXIMATE EDGE OF WATER
- PREVIOUSLY DREDGED AREA
- LOWLAND PORTION OF THE SOUTHEAST AREA
- DIVISION STREET OUTFALL AREA

NOTES:

1. LAKE EXTENT DIGITIZED FROM: MARCH 27 AND APRIL 7, 1999 AERIAL PHOTOS OBTAINED FROM ILLINOIS NATURAL RESOURCES GEOSPATIAL DATA CLEARINGHOUSE. www.isgs.uiuc.edu/nsdihome
2. CONTOUR FROM QUADRANGLE www.isgs.uiuc.edu:/nsdihome AND FROM APRIL 28, 1995 AERIAL PHOTOGRAPHY. SURDEX, CHESTERFIELD, MISSOURI.

0 300 600 Feet

GRAPHIC SCALE

NEW JERSEY ZINC/MOBIL CHEMICAL SITE
DEPUE, ILLINOIS

OU5 HUMAN HEALTH RISK ASSESSMENT

SOIL SAMPLING LOCATIONS -
DIVISION STREET OUTFALL AND SOUTH DITCH

ARCADIS

FIGURE
2-2

CITY: SYR DIV/GROUP: IM DB: KES LD: PIC: PM: TM: TR:
Depue Lake (B0085635.0003.00001)
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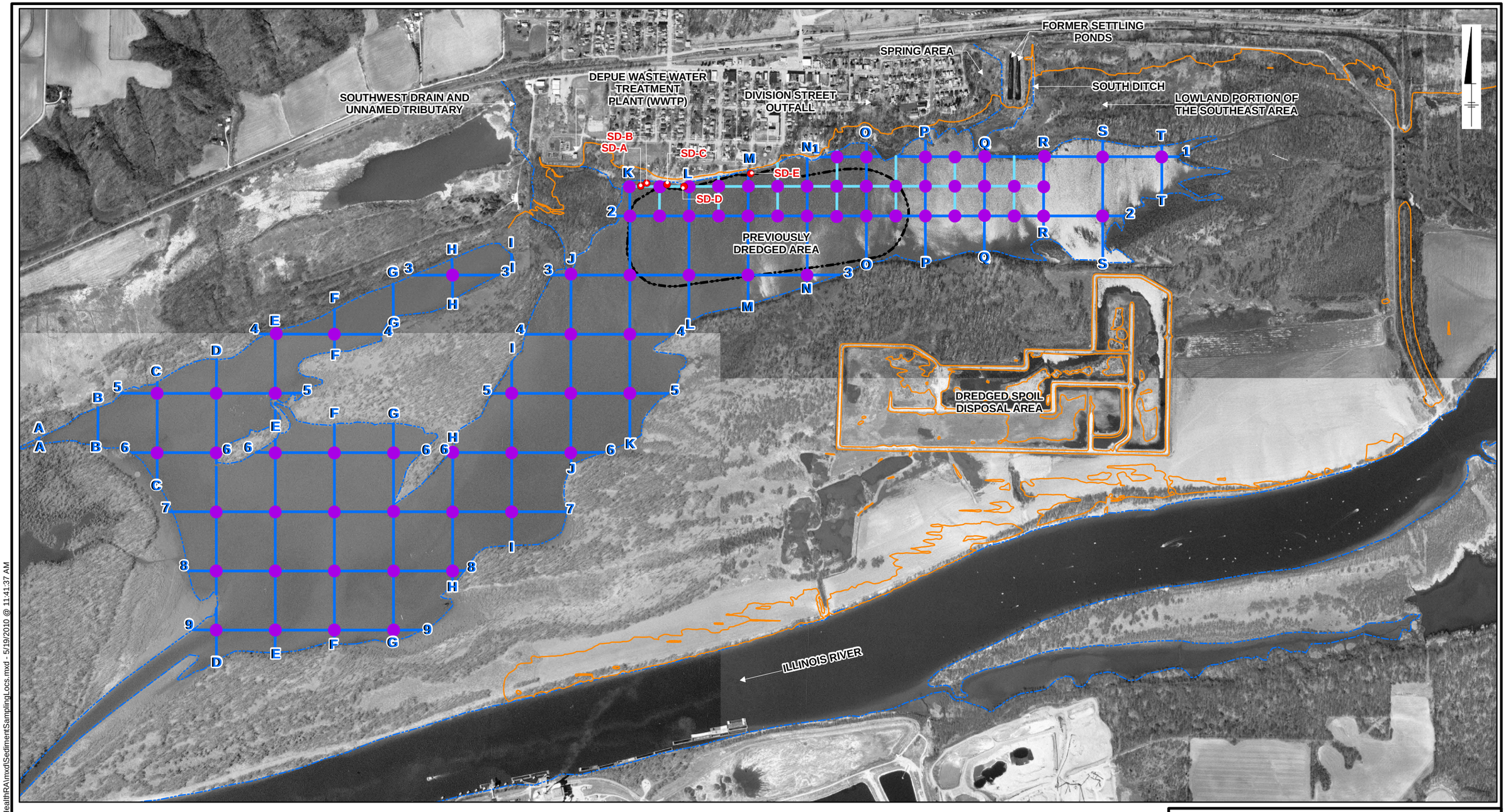


LEGEND:

- SEDIMENT SAMPLE LOCATION (e.g. SD-A) (n=5)
- SURFICIAL SEDIMENT SAMPLE LOCATION (n = 78)
- USGS 450 FT CONTOUR
- APPROXIMATE EDGE OF WATER
- PREVIOUSLY DREDGED AREA
- SUPPLEMENTAL 310-FOOT SAMPLING GRID
- 620-FOOT SAMPLING GRID (LETTERS A THROUGH T DESIGNATE VERTICAL TRANSECTS, NUMBERS 1 THROUGH 9 DESIGNATE HORIZONTAL TRANSECTS)

NOTES:

1. LAKE EXTENT DIGITIZED FROM: MARCH 27 AND APRIL 7, 1999 AERIAL PHOTOS OBTAINED FROM ILLINOIS NATURAL RESOURCES GEOSPATIAL DATA CLEARINGHOUSE. www.isgs.uiuc.edu/nsdihome
2. CONTOUR FROM QUADRANGLE www.isgs.uiuc.edu:/nsdihome AND FROM APRIL 28, 1995 AERIAL PHOTOGRAPHY. SURDEX, CHESTERFIELD, MISSOURI.

0 1,000 2,000 Feet

GRAPHIC SCALE

NEW JERSEY ZINC/MOBIL CHEMICAL SITE
DEPUE, ILLINOIS

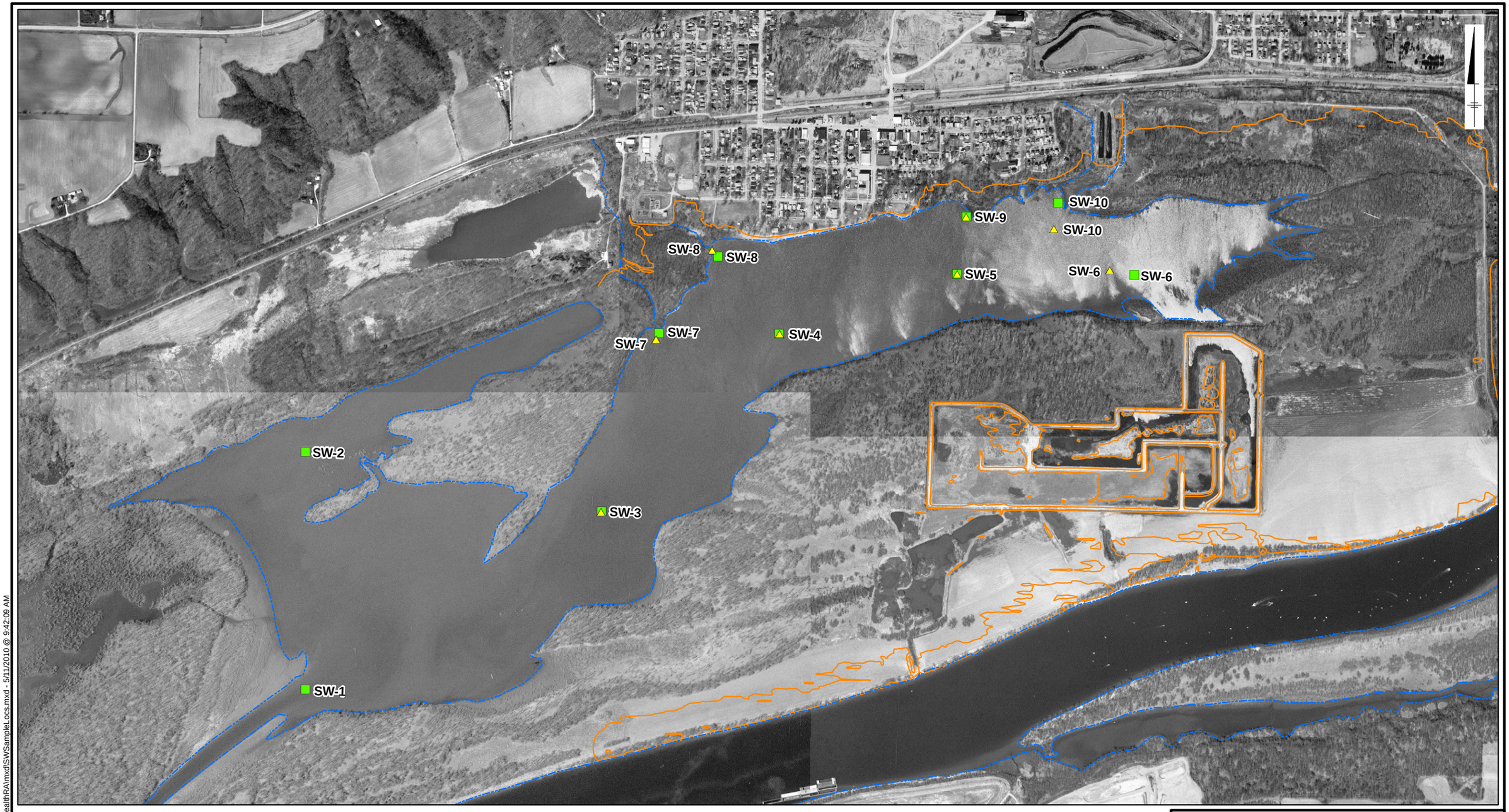
OU5 HUMAN HEALTH RISK ASSESSMENT

SEDIMENT SAMPLING LOCATIONS

ARCADIS

FIGURE 2-3

CITY: SYR DIV/GROUP: IM DB: KES LD: PIC: PM: TM: TR:
Depue Lake (B0085635.0003.00001)
Q:\Depue_Group\Depue_Illinois\OU5HumanHealthRA\mxd\SedimentSamplingLocs.mxd - 5/19/2010 @ 11:41:37 AM



LEGEND:

SURFACE WATER SAMPLE LOCATIONS:

- AMBIENT WATER HIGH FLOW
- AMBIENT WATER LOW FLOW

- APPROXIMATE EDGE OF WATER
- USGS 450 FT CONTOUR

NOTES:

1. LAKE EXTENT DIGITIZED FROM: MARCH 27 AND APRIL 7, 1999 AERIAL PHOTOS OBTAINED FROM ILLINOIS NATURAL RESOURCES GEOSPATIAL DATA CLEARINGHOUSE. www.isgs.uiuc.edu/nsdihome
2. CONTOUR FROM QUADRANGLE www.isgs.uiuc.edu:/nsdihome AND FROM APRIL 28, 1995 AERIAL PHOTOGRAPHY. SURDEX, CHESTERFIELD, MISSOURI.

0 1,000 2,000 Feet

GRAPHIC SCALE

NEW JERSEY ZINC/MOBIL CHEMICAL SITE
DEPUE, ILLINOIS

OU5 HUMAN HEALTH RISK ASSESSMENT

SURFACE WATER SAMPLING LOCATIONS

ARCADIS

FIGURE
2-4

CITY: SYR DIV/GROUP: IM DB: KES LD: PIC: PM: TM: TR:
Depue Lake (B0085635.0003.00001)
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LEGEND:

- SHORELINE SEEP LOCATION
- SEEP LOCATION
- CULVERT LOCATION
- USGS 450 FT CONTOUR
- APPROXIMATE EDGE OF WATER
- SHORELINE DEBRIS (AREA APPROXIMATE)
- POSSIBLE SITE-RELATED MATERIAL

NOTES:

1. LAKE EXTENT DIGITIZED FROM: MARCH 27 AND APRIL 7, 1999 AERIAL PHOTOS OBTAINED FROM ILLINOIS NATURAL RESOURCES GEOSPATIAL DATA CLEARINGHOUSE. www.isgs.uiuc.edu/nsdihome
2. CONTOUR FROM QUADRANGLE www.isgs.uiuc.edu:/nsdihome AND FROM APRIL 28, 1995 AERIAL PHOTOGRAPHY. SURDEX, CHESTERFIELD, MISSOURI.
3. FIELD OBSERVATIONS WERE RECORDED ON JULY 10TH - 13TH, 2006.
4. CULVERT LOCATION DEFINITIONS: CMP - CORRUGATED METAL PIPE, PVC - POLYVINYL CHLORIDE, WWTP - WASTEWATER TREATMENT PLANT.

0 400 800 Feet

GRAPHIC SCALE

NEW JERSEY ZINC/MOBIL CHEMICAL SITE
DEPUE, ILLINOIS

OU5 HUMAN HEALTH RISK ASSESSMENT

GROUNDWATER SEEP SAMPLING LOCATIONS

ARCADIS

FIGURE
2-5

CITY: SYR DIV/GROUP: IM DB: KES LD: PIC: PM: TM: TR:
Depue Lake (B0085635.0003.00001)
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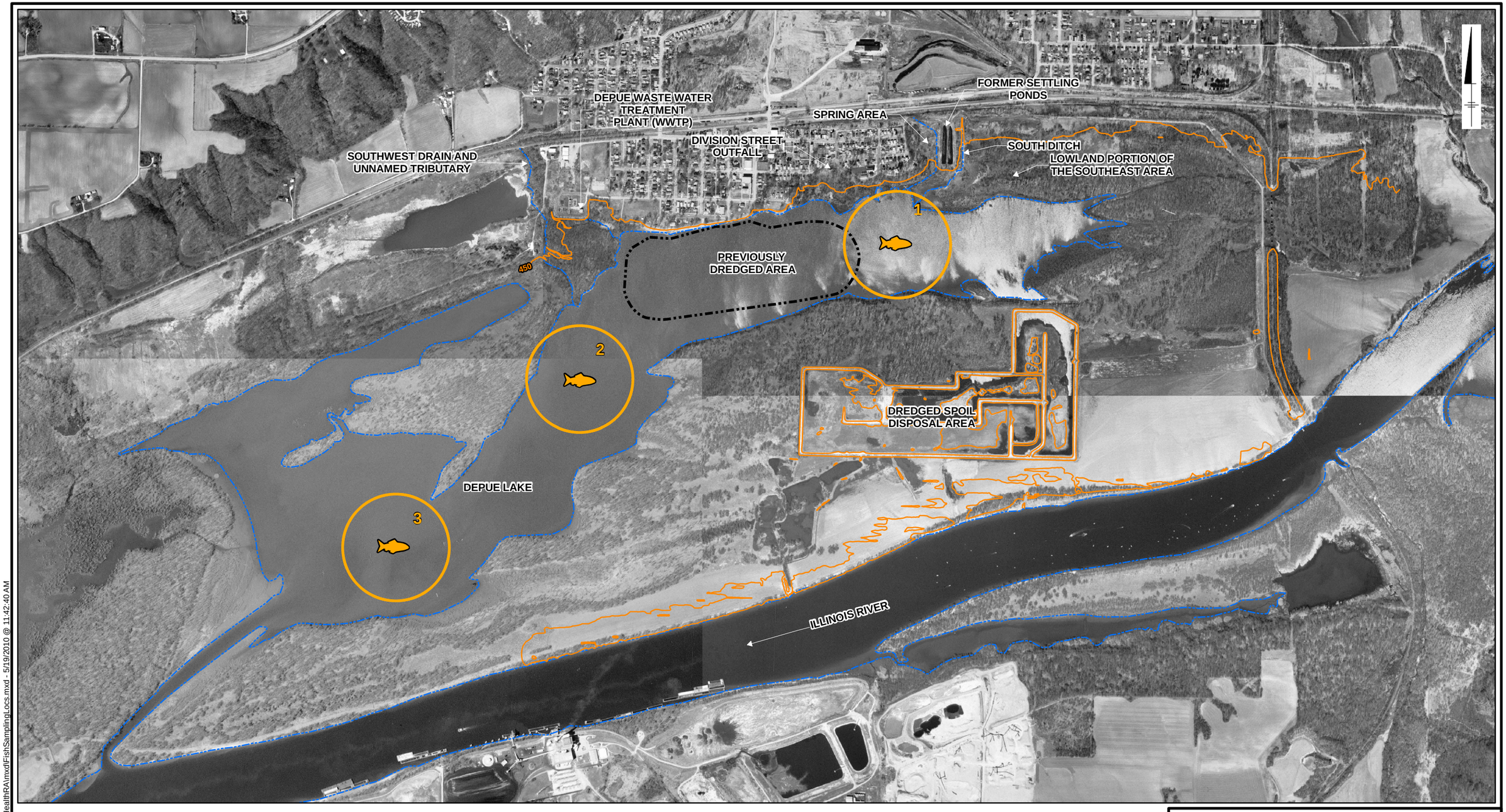

LEGEND:

- FISH SAMPLING LOCATION
- USGS 450 FT CONTOUR
- APPROXIMATE EDGE OF WATER
- PREVIOUSLY DREDGED AREA

NOTES:

1. LAKE EXTENT DIGITIZED FROM: MARCH 27 AND APRIL 7, 1999 AERIAL PHOTOS OBTAINED FROM ILLINOIS NATURAL RESOURCES GEOSPATIAL DATA CLEARINGHOUSE. www.isgs.uiuc.edu/nsdihome
2. CONTOUR FROM QUADRANGLE www.isgs.uiuc.edu:/nsdihome AND FROM APRIL 28, 1995 AERIAL PHOTOGRAPHY. SURDEX, CHESTERFIELD, MISSOURI.

0 1,200 2,400 Feet

GRAPHIC SCALE

NEW JERSEY ZINC/MOBIL CHEMICAL SITE
DEPUE, ILLINOIS

OU5 HUMAN HEALTH RISK ASSESSMENT

FISH SAMPLING LOCATIONS

ARCADIS

FIGURE
2-6

CITY: SYR DIV/GROUP: IM DB: KES LD: PIC: PM: TM: TR:
Depue Lake (B0085635.0003.00001)
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Depue Lake (B0085635.0003.00001)
Q:\Depue_Group\Depue_Illinois\OU5HumanHealthRA\mxd\GooseLakeSiteLocation.mxd

0 1.5 3
Miles
GRAPHIC SCALE

NOTE:

1. AERIALS FLOWN IN SEPTEMBER 2005 AND OBTAINED FROM THE ILLINOIS NATURAL RESOURCES GEOSPATIAL DATA CLEARINGHOUSE (www.isgs.uiuc.edu/nsdihome).

NEW JERSEY ZINC/MOBIL CHEMICAL SITE
DEPUE, ILLINOIS

OU5 HUMAN HEALTH RISK ASSESSMENT

GOOSE LAKE SITE LOCATION MAP

ARCADIS

FIGURE
2-7

CITY: SYR DIV/GROUP: IM DB: KES LD: PIC: PM: TM: TR:
Depue Lake (B0085635.0003.00001)
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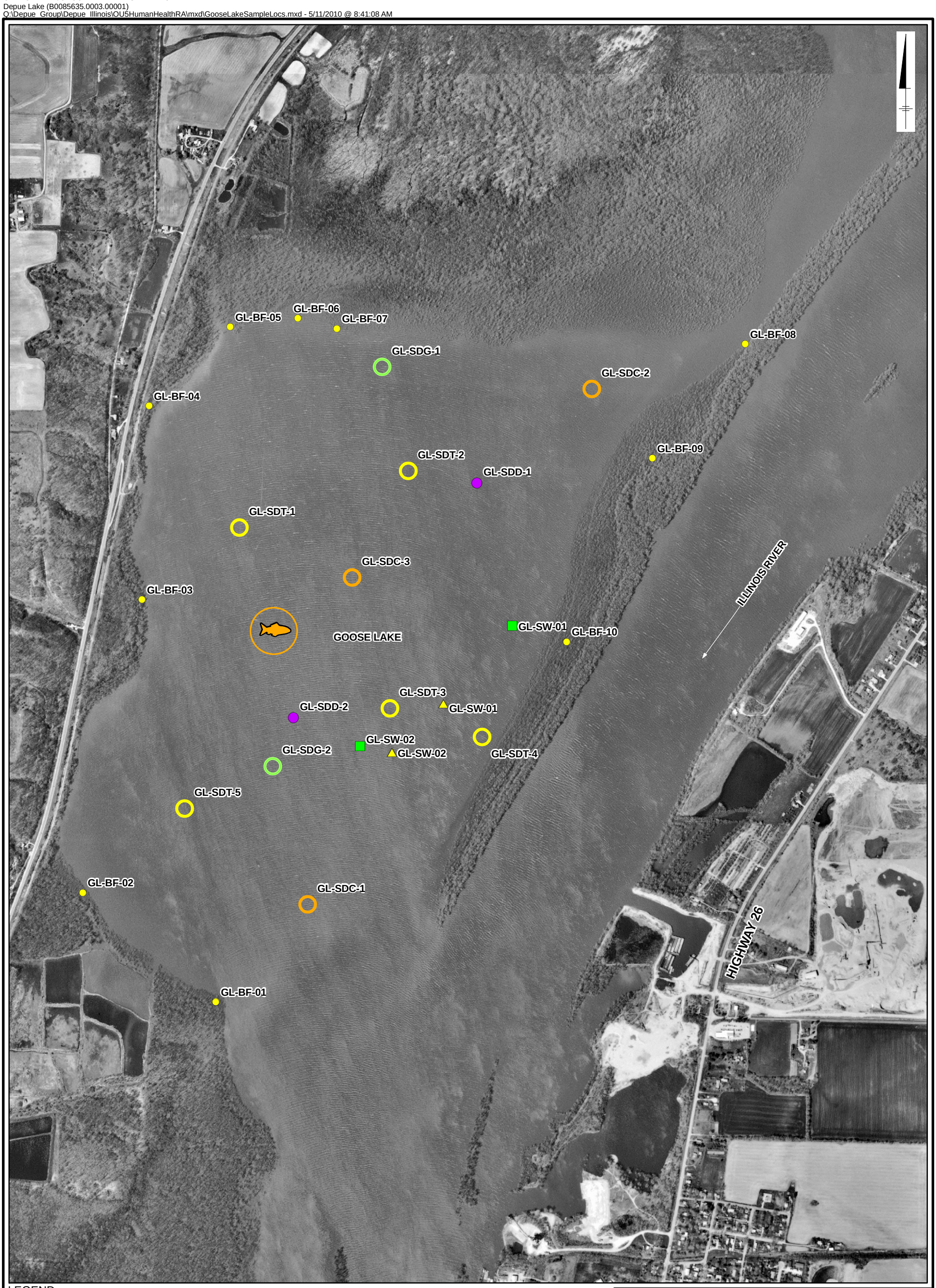


LEGEND:

- GOOSE LAKE SOIL SAMPLE LOCATION (N = 10)
- AMBIENT WATER (HIGH FLOW) (N=2)
- AMBIENT WATER (LOW FLOW) (N=2)
- FISH SAMPLING LOCATION
- SEDIMENT CORE SAMPLE LOCATION (N = 3)
- GEOCHRONOLOGICAL CORE SAMPLE LOCATION (N = 2)
- SEDIMENT QUALITY TRIAD STUDY SAMPLE LOCATION (N = 5)
- SURFICIAL SEDIMENT SAMPLE LOCATION (N=2)

NOTE:

1. AERIALS FLOWN IN SEPTEMBER 2001 AND OBTAINED FROM THE ILLINOIS NATURAL RESOURCES GEOSPATIAL DATA CLEARINGHOUSE (www.isgs.uiuc.edu/nsdihome).

0 1,000 2,000 Feet
GRAPHIC SCALE

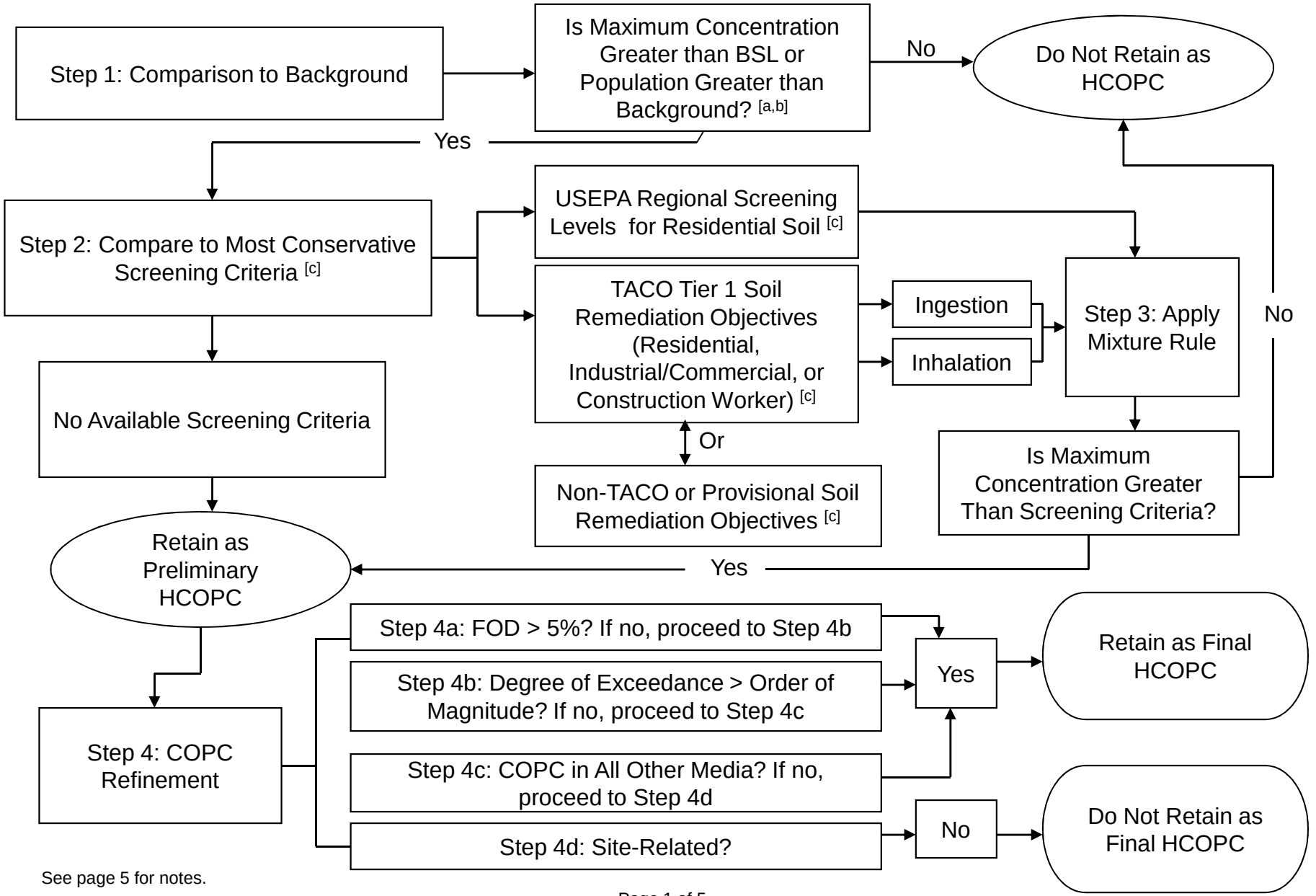
NEW JERSEY ZINC/MOBIL CHEMICAL SITE
DEPUE, ILLINOIS
OU5 HUMAN HEALTH RISK ASSESSMENT

GOOSE LAKE SAMPLING LOCATIONS

ARCADIS

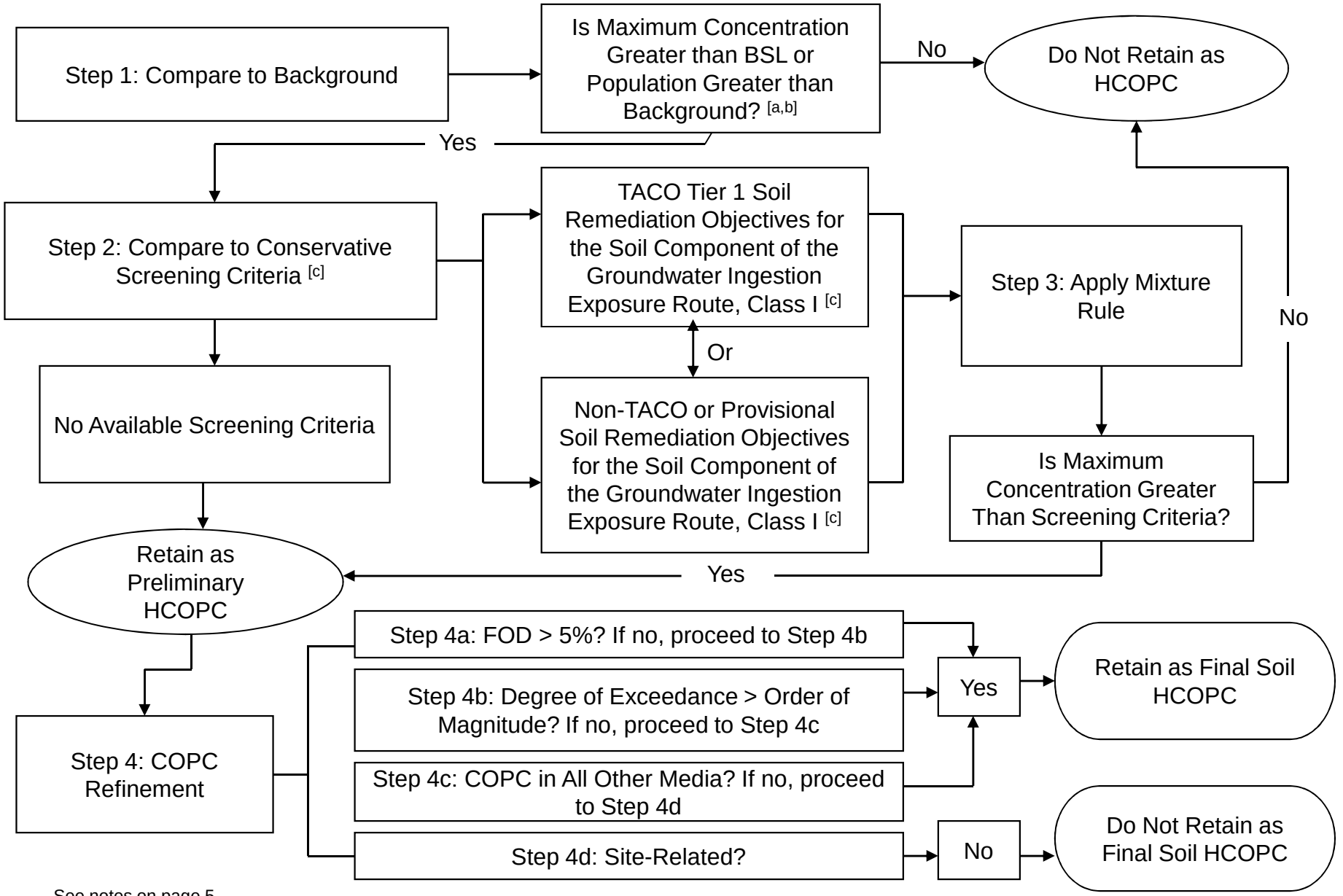
FIGURE
2-8

Figure 2-9. Flowchart for Soil and Sediment COPC Screening Process
OU5 Human Health Risk Assessment
DePue Site, Operable Unit 5, DePue, Bureau County, Illinois



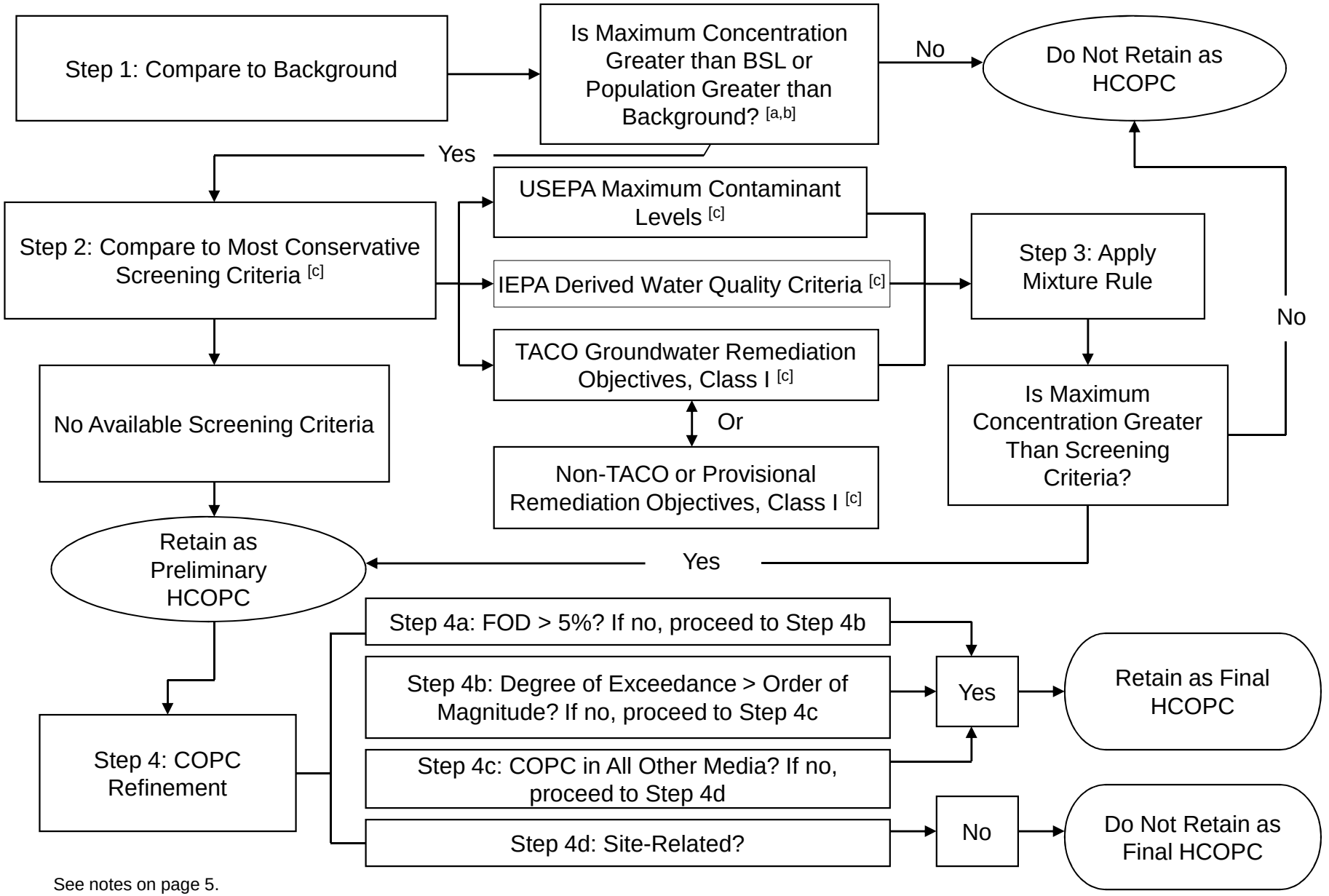
See page 5 for notes.

Figure 2-10. Flowchart for Soil-to-Groundwater COPC Screening Process
OU5 Human Health Risk Assessment
DePue Site, Operable Unit 5, DePue, Bureau County, Illinois



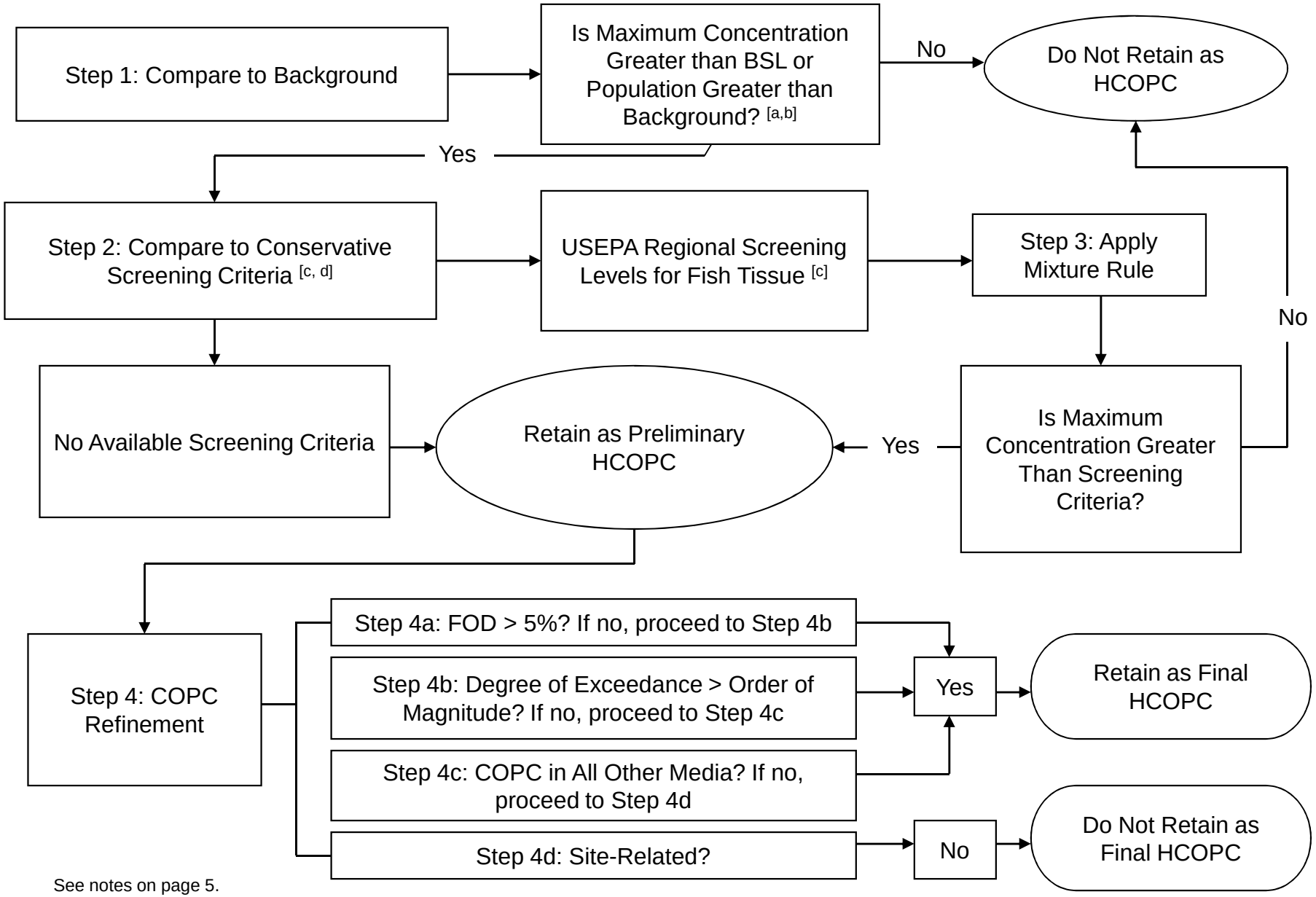
See notes on page 5.

Figure 2-11. Flowchart for Groundwater Seep and Surface Water COPC Screening Process
OU5 Human Health Risk Assessment
DePue Site, Operable Unit 5, DePue, Bureau County, Illinois



See notes on page 5.

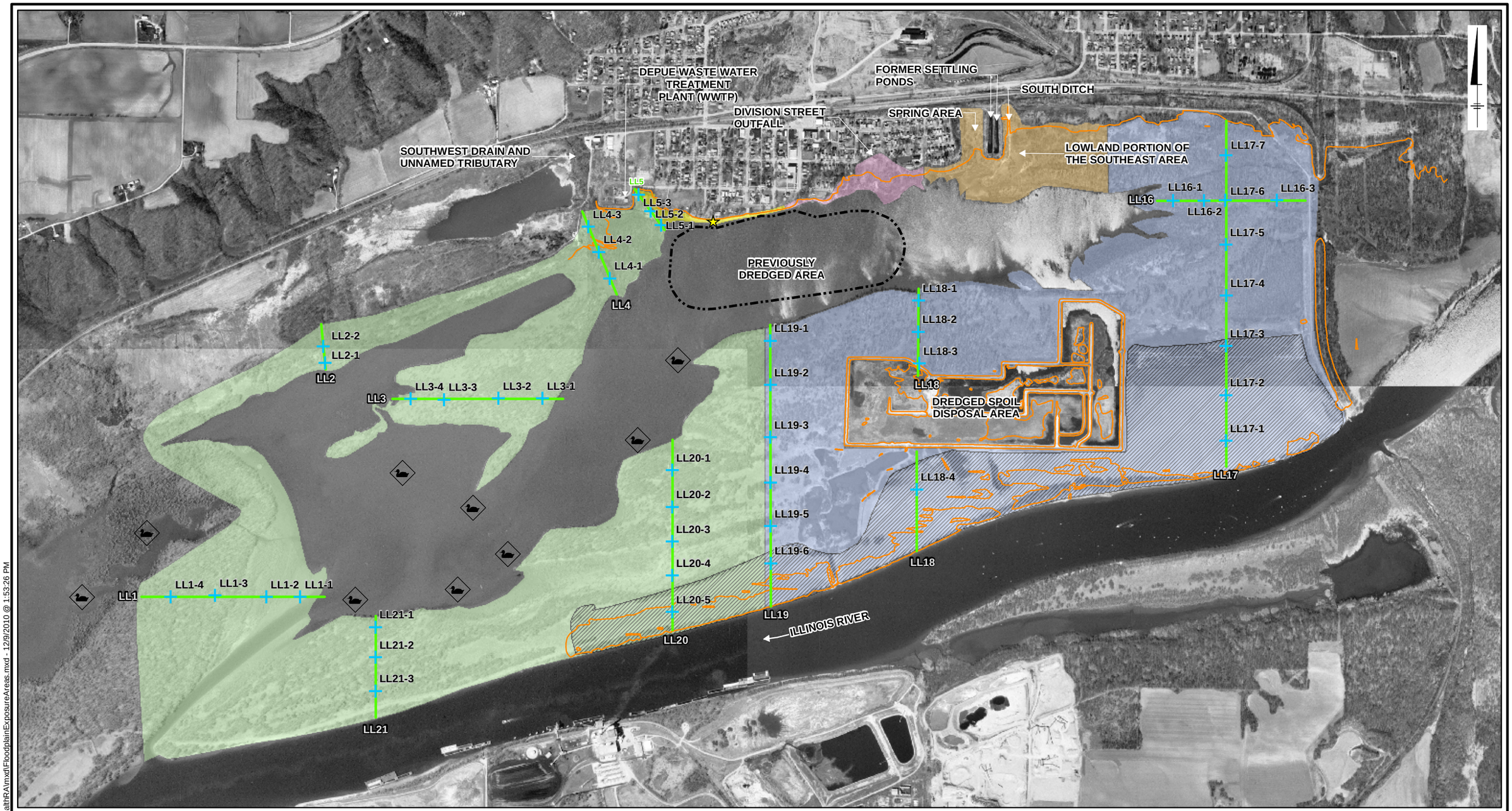
Figure 2-12. Flowchart for Fish Fillet COPC Screening Process
OU5 Human Health Risk Assessment
DePue Site, Operable Unit 5, DePue, Bureau County, Illinois



See notes on page 5.

Notes:

BSL = Background screening level
FOD = Frequency of detection
HCOPC = Human health constituent of potential concern
IEPA = Illinois Environmental Protection Agency
PAH = Polycyclic aromatic hydrocarbon
TACO = Tiered Approach to Corrective Action Objectives, Part 742
USEPA = United States Environmental Protection Agency
UPL = Upper Prediction Limit
[a] BSLs will represent UPLs/maximum of Goose Lake samples.
[b] BSLs will only be applied to inorganics and PAHs.
[c] Most conservative of all listed criteria will be used in the HCOPC screening process (i.e., lowest value).
[d] The comparison to screening criteria for fish tissue data will also include an assessment of detection limits. Those metals with elevated detection limits may be carried further through the risk assessment process if deemed necessary.



LEGEND:

- AREA WITH ILLINOIS DEPARTMENT OF NATURAL RESOURCES (IDNR) HUNTER CHECK STATION, CONCRETE BOAT RAMP, AND GRAVEL CANOE/ BOAT LAUNCH AREA
- IDNR DUCK BLIND LOCATION
- ACTUAL LOWLAND AREA SOIL SAMPLE LOCATION (e.g. LL1-1) (n = 44)
- LOWLAND AREA SOIL SAMPLE TRANSECT
- USGS 450 FT CONTOUR
- PREVIOUSLY DREDGED AREA
- FLOODPLAIN AREA 1 A
- FLOODPLAIN AREA 1 B
- FLOODPLAIN AREA 1 C
- FLOODPLAIN AREA 2
- FLOODPLAIN AREA 3
- AGRICULTURAL AREA

NOTES:

1. LAKE EXTENT DIGITIZED FROM: MARCH 27 AND APRIL 7, 1999 AERIAL PHOTOS OBTAINED FROM ILLINOIS NATURAL RESOURCES GEOSPATIAL DATA CLEARINGHOUSE. www.isgs.uiuc.edu/nsdihome
2. CONTOUR FROM QUADRANGLE www.isgs.uiuc.edu:/nsdihome AND FROM APRIL 28, 1995 AERIAL PHOTOGRAPHY. SURDEX, CHESTERFIELD, MISSOURI.

0 1,200 2,400 Feet

GRAPHIC SCALE

NEW JERSEY ZINC/MOBIL CHEMICAL SITE
DEPUE, ILLINOIS

OU5 HUMAN HEALTH RISK ASSESSMENT

FLOODPLAIN EXPOSURE AREAS

ARCADIS

FIGURE
2-13

CITY: SYR DIV/GROUP: IM DB: KES LD: PIC: PM: TM: TR:
Depue Lake (B0085635.0003.00001)
Q:\Depue_Group\Depue_Illinois\OU5HumanHealthRA\mxd\FloodplainExposureAreas.mxd - 12/9/2010 @ 1:53:26 PM

LEGEND:

- ACTUAL LOWLAND AREA SOIL SAMPLE LOCATION (e.g. LL6-1) (n=39)
- LOWLAND AREA SOIL SAMPLE TRANSECT
- USGS 450 FT CONTOUR
- APPROXIMATE EDGE OF WATER
- PREVIOUSLY DREDGED AREA
- FLOODPLAIN AREA 1 A
- FLOODPLAIN AREA 1 B
- FLOODPLAIN AREA 1 C
- FLOODPLAIN AREA 2
- FLOODPLAIN AREA 3

NOTES:

1. LAKE EXTENT DIGITIZED FROM: MARCH 27 AND APRIL 7, 1999 AERIAL PHOTOS OBTAINED FROM ILLINOIS NATURAL RESOURCES GEOSPATIAL DATA CLEARINGHOUSE. www.isgs.uiuc.edu/nsdihome
2. CONTOUR FROM QUADRANGLE www.isgs.uiuc.edu:/nsdihome AND FROM APRIL 28, 1995 AERIAL PHOTOGRAPHY. SURDEX, CHESTERFIELD, MISSOURI.

0 300 600 Feet

GRAPHIC SCALE

NEW JERSEY ZINC/MOBIL CHEMICAL SITE
DEPUE, ILLINOIS

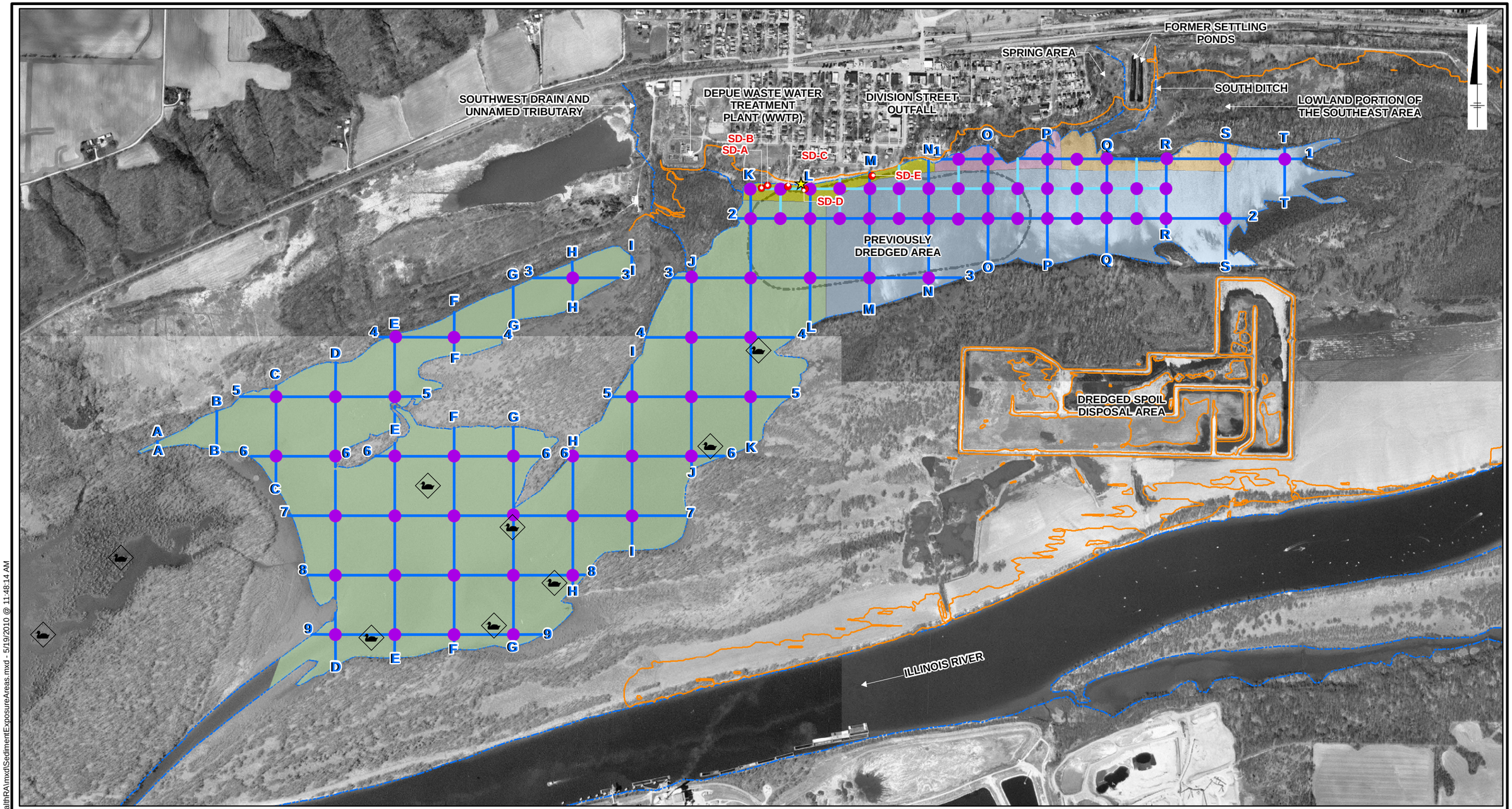
OU5 HUMAN HEALTH RISK ASSESSMENT

FLOODPLAIN EXPOSURE AREAS - DIVISION STREET OUTFALL AND SOUTH DITCH

ARCADIS

FIGURE
2-14

CITY: SYR DIV/GROUP: IM DB: KES LD: PIC: PM: TM: TR:
Depue Lake (B0085635.0003.00001)
Q:\Depue_Group\Depue_Illinois\OU5HumanHealthRA\mxd\FloodplainExposureAreas_DivisionSt.mxd - 12/9/2010 @ 1:55:03 PM



LEGEND:

- AREA WITH ILLINOIS DEPARTMENT OF NATURAL RESOURCES (IDNR) HUNTER CHECK STATION, CONCRETE BOAT RAMP, AND GRAVEL CANOE/ BOAT LAUNCH AREA
- IDNR DUCK BLIND LOCATION
- SEDIMENT SAMPLE LOCATION (e.g. SD-A) (n=5)
- SURFICIAL SEDIMENT SAMPLE LOCATION (n = 78)
- PREVIOUSLY DREDGED AREA
- USGS 450 FT CONTOUR
- SUPPLEMENTAL 310-FOOT SAMPLING GRID
- 620-FOOT SAMPLING GRID (LETTERS A THROUGH T DESIGNATE VERTICAL TRANSECTS, NUMBERS 1 THROUGH 9 DESIGNATE HORIZONTAL TRANSECTS)
- APPROXIMATE EDGE OF WATER
- SEDIMENT AREA 1 A
- SEDIMENT AREA 1 B
- SEDIMENT AREA 1 C
- SEDIMENT AREA 2
- SEDIMENT AREA 3

NOTES:

1. LAKE EXTENT DIGITIZED FROM: MARCH 27 AND APRIL 7, 1999 AERIAL PHOTOS OBTAINED FROM ILLINOIS NATURAL RESOURCES GEOSPATIAL DATA CLEARINGHOUSE. www.isgs.uiuc.edu/nsdihome
2. CONTOUR FROM QUADRANGLE www.isgs.uiuc.edu:/nsdihome AND FROM APRIL 28, 1995 AERIAL PHOTOGRAPHY. SURDEX, CHESTERFIELD, MISSOURI.

0 1,000 2,000 Feet

GRAPHIC SCALE

NEW JERSEY ZINC/MOBIL CHEMICAL SITE
DEPUE, ILLINOIS

OU5 HUMAN HEALTH RISK ASSESSMENT

SEDIMENT EXPOSURE AREAS

ARCADIS

FIGURE
2-15

CITY: SYR DIV/GROUP: IM DB: KES LD: PIC: PM: TM: TR:
Depue Lake (B0085635.0003.00001)
Q:\Depue_Group\Depue_Illinois\OU5HumanHealthRA\mxd\SedimentExposureAreas.mxd - 5/19/2010 @ 11:48:14 AM

Table G.1
DePue Lake Whole-Body Fish Data
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Location ID: Date Collected: Species:	Units	USEPA RSL for Fish Tissue[1]	OU5-FI1-001 06/04/07 freshwater drum	OU5-FI1-002 06/04/07 orange-spotted sunfish	OU5-FI1-003 06/04/07 orange-spotted sunfish	OU5-FI1-057 06/06/07 bluegill	OU5-FI1-058 06/06/07 bluegill	OU5-FI2-017 06/05/07 freshwater drum	OU5-FI2-020 06/05/07 orange-spotted sunfish	OU5-FI2-021 06/05/07 orange-spotted sunfish	OU5-FI2-068 06/05/07 bluegill	OU5-FI2-069 06/05/07 bluegill	OU5-FI3-076 06/06/07 freshwater drum
TAL-Metals and Cyanide													
Aluminum	mg/kg	1400	40.4	5.89 J	8.81 J	16 J	38.9	283	15.1 J	12.5 J	7.46 J	21.8	40.3
Antimony	mg/kg	0.54	5.99 U	5.94 U	5.94 U	5.95 U	5.89 U	5.82 U	5.51 U	7.4 U	5.66 U	5.51 U	5.51 U
Arsenic	mg/kg	0.0021	**0.494 J**	0.995 U	0.999 U	**0.504 J**	**0.513 J**	0.98 U	**0.47 J**	**0.331 J**	0.944 U	0.928 U	**0.483 J**
Barium	mg/kg	270	3.08 J	1.02 J	1.32 J	1.74 J	2.48 J	13.7 J	2.11 J	1.6 J	1.53 J	1.39 J	3.41 J
Beryllium	mg/kg	2.7	0.106 J	0.0269 J	0.0342 J	0.0277 J	0.0351 J	0.476 U	0.448 U	0.452 U	0.0239 J	0.027 J	0.0264 J
Cadmium	mg/kg	1.4	0.376 J	0.484 U	0.5 U	0.504 U	0.486 U	**2.1**	0.448 U	0.452 U	0.472 U	0.464 U	0.454 U
Calcium	mg/kg	NA	13,700	9,580	12,500	15,200	20,000	16,600	15,200	12,300	12,800	13,000	21,400
Chromium	mg/kg	0.0063	1.01 U	0.995 U	0.999 U	0.983 U	0.972 U	**1.82**	0.918 U	0.933 U	0.944 U	0.928 U	**1.68**
Cobalt	mg/kg	0.41	5.01 U	4.95 U	4.94 U	4.94 U	4.91 U	4.84 U	4.59 U	4.64 U	4.72 U	4.59 U	4.6 U
Copper	mg/kg	54	1.6 J	2.47 U	2.47 U	1.36 J	0.81 J	10.7	2.28 U	2.32 U	0.472 J	0.546 J	0.824 J
Iron	mg/kg	950	83 U	11.9 U	17.7 U	33.5	55.4	675	31.8 U	28 U	14.8	50.5	82.9
Lead	mg/kg	NA	1.15	0.296 J	0.473 J	0.983 U	0.972 U	5.54	0.314 J	0.452 J	0.944 U	0.928 U	0.909 U
Magnesium	mg/kg	NA	425 J	347 J	434 J	514	597	860	484	373 J	384 J	453 J	599
Manganese	mg/kg	190	6.7	3.12	4.47	8.54	14.1	42.3	6.27	4.48	9.26	6.99	8.15
Mercury	mg/kg	0.14	0.101 U	0.0942 U	0.0999 U	0.101 U	0.0945 U	0.101 U	0.0941 U	0.0993 U	0.109	0.101 U	0.0994 U
Nickel	mg/kg	27	0.0705 J	3.95 U	3.97 U	0.0832 J	3.92 U	3.89 U	3.67 U	3.7 U	3.78 U	3.66 U	0.105 J
Potassium	mg/kg	NA	2,940	2,630	3,160	3,530	3,270	3,050	3,400	2,590	2,300	3,140	3,950
Selenium	mg/kg	6.8	3.5 U	3.47 U	3.47 U	0.731 J	0.864 J	3.39 U	3.2 U	3.25 U	0.59 J	0.683 J	1.16 J
Silver	mg/kg	6.8	1.01 U	0.995 U	0.999 U	0.983 U	0.972 U	0.98 U	0.0493 J	0.0662 J	0.944 U	0.928 U	0.909 U
Sodium	mg/kg	NA	1,120	839	986	1,010	1,190	1,230	1,110	924	861	958	1,550
Thallium	mg/kg	0.014	2.49 U	2.47 U	2.47 U	2.47 U	2.46 U	2.44 U	2.28 U	2.32 U	2.36 U	2.29 U	2.3 U
Vanadium	mg/kg	6.8	0.226 J	4.95 U	0.0894 J	0.209 J	0.297 J	4.84 U	0.155 J	0.0963 J	0.274 J	0.172 J	0.312 J
Zinc	mg/kg	410	60.6	27.2	35.2	35.5	39.7	300	33.4	27.5	24	24.1	28.4
Miscellaneous													
Percent Moisture	%	--	76.5	73.1	73.7	74.8	73	72	77.6	69.9	70.5	72.7	71.6

Table G.1
DePue Lake Whole-Body Fish Data
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Location ID: Date Collected: Species:	Units	USEPA RSL for Fish Tissue[1]	OU5-FI3-077 06/06/07 freshwater drum	OU5-FI3-078 06/06/07 bluegill	OU5-FI3-079 06/06/07 bluegill	OU5-FI3-080 06/05/07 orange-spotted sunfish
TAL-Metals and Cyanide						
Aluminum	mg/kg	1400	17.9 J	4.66 J	8.01 J	20.1
Antimony	mg/kg	0.54	5.6 U	5.76 U	5.88 U	5.57 U
Arsenic	mg/kg	0.0021	**0.323 J**	0.973 U	0.972 U	**0.322 J**
Barium	mg/kg	270	3.28 J	1.59 J	1.21 J	2.09 J
Beryllium	mg/kg	2.7	0.121 J	0.486 U	0.0284 J	0.0253 J
Cadmium	mg/kg	1.4	0.105 J	0.486 U	0.498 U	0.46 U
Calcium	mg/kg	NA	16,500	13,500	9,620	13,700
Chromium	mg/kg	0.0063	**0.565 J**	0.973 U	0.972 U	0.92 U
Cobalt	mg/kg	0.41	4.68 U	4.81 U	4.91 U	4.62 U
Copper	mg/kg	54	0.673 J	0.435 J	0.45 J	0.667 J
Iron	mg/kg	950	40.4	9.5 J	15.7	35.7
Lead	mg/kg	NA	0.942 U	0.973 U	0.972 U	0.92 U
Magnesium	mg/kg	NA	530	356 J	344 J	465
Manganese	mg/kg	190	4.52	6.09	6.11	4.76
Mercury	mg/kg	0.14	0.0942 U	0.0947 U	0.0403 J	0.0989 U
Nickel	mg/kg	27	0.105 J	0.133 J	3.91 U	3.7 U
Potassium	mg/kg	NA	3,820	2,130	2,650	3,610
Selenium	mg/kg	6.8	1.24 J	0.512 J	0.427 J	0.92 J
Silver	mg/kg	6.8	0.0538 J	0.973 U	0.972 U	0.92 U
Sodium	mg/kg	NA	1,380	722	758	1,150
Thallium	mg/kg	0.014	2.34 U	2.41 U	2.44 U	2.32 U
Vanadium	mg/kg	6.8	0.239 J	0.123 J	0.111 J	0.0759 J
Zinc	mg/kg	410	20.6	21.2	22.9	29.4
Miscellaneous						
Percent Moisture	%	--	73.1	74.4	76.3	77

Table G.1
DePue Lake Whole-Body Fish Data
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplains, DePue, Illinois

Notes:

1. USEPA Regional Screening Levels for fish tissue (June 2011).

RSL = Regional Screening Level

The following species-specific RSLs were used:
Chromium (VI) for Chromium
Methylmercury for Mercury
Nickel Soluble Salts for Nickel
Thallium (soluble salts) for Thallium
Vanadium and Compounds for Vanadium
Zinc and Compounds for Zinc

Criteria exceedances are bolded and shaded.

NA = Not available

Whole-body fish data include freshwater drum, orange-spotted sunfish, and bluegill. Gizzard shad were not included in evaluation because this species is not expected to be a target sportfish for anglers.

Lab Qualifiers:

J = Estimated Value

U = The analyte was analyzed for, but not detected.

Table G.2
Occurrence, Distribution, and Selection of Chemicals of Potential Concern
DePue Lake Whole-Body Fish Data
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Chemical of Potential Concern	Units	Minimum Detect	Maximum Detect	Detection Frequency	Max Detect Location	Minimum Non-Detect	Maximum Non-Detect	Concentration Used for Screening [1]	Screening Toxicity Value [2]	Final COPC Flag (Y/N)	Rationale for Selection or Deletion [3]
TAL-Metals and Cyanide											
Aluminum	mg/kg	4.66	283	15/15	OU5-FI2-017	N/A	N/A	283	1400	N	BSTV
Antimony	mg/kg	ND	ND	0/15	--	5.51	7.4	ND	0.54	N	BSTV
Arsenic	mg/kg	0.322	0.513	8/15	OU5-FI1-058	0.928	0.999	0.513	0.0021	**Y**	**ASTV**
Barium	mg/kg	1.02	13.7	15/15	OU5-FI2-017	N/A	N/A	13.7	270	N	BSTV
Beryllium	mg/kg	0.0239	0.121	11/15	OU5-FI3-077	0.448	0.486	0.121	2.7	N	BSTV
Cadmium	mg/kg	0.105	2.1	3/15	OU5-FI2-017	0.448	0.504	2.1	1.4	**Y**	**ASTV**
Calcium	mg/kg	9580	21400	15/15	OU5-FI3-076	N/A	N/A	21,400	N/A	N	ENUT
Chromium	mg/kg	0.565	1.82	3/15	OU5-FI2-017	0.918	1.01	1.82	0.0063	**Y**	**ASTV**
Cobalt	mg/kg	ND	ND	0/15	--	4.59	5.01	ND	0.41	N	BSTV
Copper	mg/kg	0.435	10.7	11/15	OU5-FI2-017	2.28	2.47	10.7	54	N	BSTV
Iron	mg/kg	9.5	675	10/15	OU5-FI2-017	11.9	83	675	950	N	BSTV
Lead	mg/kg	0.296	5.54	6/15	OU5-FI2-017	0.909	0.983	5.54	N/A	**Y**	**See note [a]**
Magnesium	mg/kg	344	860	15/15	OU5-FI2-017	N/A	N/A	860	N/A	N	ENUT
Manganese	mg/kg	3.12	42.3	15/15	OU5-FI2-017	N/A	N/A	42.3	190	N	BSTV
Mercury	mg/kg	0.0403	0.109	2/15	OU5-FI2-068	0.0941	0.101	0.109	0.14	N	BSTV
Nickel	mg/kg	0.0705	0.133	5/15	OU5-FI3-078	3.66	3.97	0.133	27	N	BSTV
Potassium	mg/kg	2130	3950	15/15	OU5-FI3-076	N/A	N/A	3,950	N/A	N	ENUT
Selenium	mg/kg	0.427	1.24	9/15	OU5-FI3-077	3.2	3.5	1.24	6.8	N	BSTV
Silver	mg/kg	0.0493	0.0662	3/15	OU5-FI2-021	0.909	1.01	0.066	6.8	N	BSTV
Sodium	mg/kg	722	1550	15/15	OU5-FI3-076	N/A	N/A	1,550	N/A	N	ENUT
Thallium	mg/kg	ND	ND	0/15	--	2.28	2.49	ND	0.014	N	BSTV
Vanadium	mg/kg	0.0759	0.312	13/15	OU5-FI3-076	4.84	4.95	0.312	6.8	N	BSTV
Zinc	mg/kg	20.6	300	15/15	OU5-FI2-017	N/A	N/A	300	410	N	BSTV

Notes:
[1] Maximum detected concentration was used for screening purposes
[2] USEPA Regional Screening Levels for fish tissue (June 2011) were used as screening values for whole-body fish tissue data
[3] Rationale codes:
ASTV = above screening toxicity value
BSTV = below screening toxicity value
ENUT = essential nutrient
[a] Potential risks associated with lead in fish tissue are evaluated with the Adult Lead Model (for adults) and the Integrated Exposure Uptake Biokinetic model (for children)
N/A = not available

Table G.3
Goose Lake Whole-Body Fish Data
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Location ID: Date Collected: Species:	Units	USEPA RSL for Fish Tissue[1]	GL-FI-014 06/06/07 freshwater drum	GL-FI-015 06/06/07 freshwater drum	GL-FI-016 06/06/07 freshwater drum	GL-FI-017 06/06/07 bluegill	GL-FI-018 06/06/07 bluegill
TAL-Metals and Cyanide							
Aluminum	mg/kg	1400	75.3	41.5	22.2	27.8	21.5
Antimony	mg/kg	0.54	6.01 U	6.01 U	5.87 U	5.5 U	5.6 U
Arsenic	mg/kg	0.0021	**0.464 J**	1.01 U	**0.382 J**	**0.468 J**	**0.552 J**
Barium	mg/kg	270	4.61 J	3.41 J	3.14 J	1.95 J	2.01 J
Beryllium	mg/kg	2.7	0.03 J	0.031 J	0.0546 J	0.0267 J	0.0301 J
Cadmium	mg/kg	1.4	0.491 U	0.49 U	0.491 U	0.468 U	0.477 U
Calcium	mg/kg	NA	23,900	22,200	19,700	14,100	13,800
Chromium	mg/kg	0.0063	**0.683 J**	**0.826 J**	**0.573 J**	0.908 U	**1.18**
Cobalt	mg/kg	0.41	5 U	5.01 U	4.91 U	4.59 U	4.67 U
Copper	mg/kg	54	0.846 J	0.851 J	0.655 J	0.688 J	0.628 J
Iron	mg/kg	950	107	73	45.6	42.9	39.7
Lead	mg/kg	NA	1.01 U	1.01 U	0.983 U	0.908 U	0.929
Magnesium	mg/kg	NA	644	599	502	547	489
Manganese	mg/kg	190	6.47	6.19	4.23	7.34	8.11
Mercury	mg/kg	0.14	0.0901 U	0.0955 U	0.101 U	0.099 U	0.0954 U
Nickel	mg/kg	27	0.117 J	0.0929 J	3.93 U	3.66 U	0.326 J
Potassium	mg/kg	NA	3,930	4,330	3,300	4,460	3,410
Selenium	mg/kg	6.8	1.26 J	1.29 J	1.15 J	1.02 J	0.879 J
Silver	mg/kg	6.8	1.01 U	1.01 U	0.983 U	0.908 U	0.929 U
Sodium	mg/kg	NA	1,590	1,550	1,310	1,310	1,020
Thallium	mg/kg	0.014	2.51 U	2.5 U	2.46 U	2.28 U	2.33 U
Vanadium	mg/kg	6.8	0.328 J	0.284 J	0.142 J	0.168 J	0.11 J
Zinc	mg/kg	410	24.7	23.5	19.6	30.3	30.1
Miscellaneous							
Percent Moisture	%	--	72.7	74.2	72.7	72.5	74.9

Notes:

1. USEPA Regional Screening Levels for fish tissue (June 2011).

RSL = Regional Screening Level

The following species-specific RSLs were used:
Chromium (VI) for Chromium
Methylmercury for Mercury
Nickel Soluble Salts for Nickel
Thallium (soluble salts) for Thallium
Vanadium and Compounds for Vanadium
Zinc and Compounds for Zinc

Criteria exceedances are bolded and shaded.

NA = Not available

Whole-body fish data include freshwater drum, orange-spotted sunfish, and bluegill. Gizzard shad were not included in evaluation because this species is not expected to be a target sportfish for anglers.

Lab Qualifiers:
J = Estimated Value
U = The analyte was analyzed for, but not detected.

Table G.4
Occurrence, Distribution, and Selection of Chemicals of Potential Concern
Goose Lake Whole-Body Fish Data
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

	Units	Minimum Detect	Maximum Detect	Detection Frequency	Max Detect Location	Minimum Non-Detect	Maximum Non-Detect	Concentration Used for Screening [1]	Screening Toxicity Value [2]	Final COPC Flag (Y/N)	Rationale for Selection or Deletion [3]
TAL-Metals and Cyanide											
Aluminum	mg/kg	21.5	75.3	5/5	GL-FI-014	N/A	N/A	75.3	1400	N	BSTV
Antimony	mg/kg	ND	ND	0/5	--	5.5	6.01	ND	0.54	N	BSTV
Arsenic	mg/kg	0.382	0.552	4/5	GL-FI-018	1.01	1.01	0.55	0.0021	**Y**	**ASTV**
Barium	mg/kg	1.95	4.61	5/5	GL-FI-014	N/A	N/A	4.61	270	N	BSTV
Beryllium	mg/kg	0.0267	0.0546	5/5	GL-FI-016	N/A	N/A	0.05	2.7	N	BSTV
Cadmium	mg/kg	ND	ND	0/5	--	0.468	0.491	ND	1.4	N	BSTV
Calcium	mg/kg	13800	23900	5/5	GL-FI-014	N/A	N/A	23,900	N/A	N	ENUT
Chromium	mg/kg	0.573	1.18	4/5	GL-FI-018	0.908	0.908	1.18	0.0063	**Y**	**ASTV**
Cobalt	mg/kg	ND	ND	0/5	--	4.59	5.01	ND	0.41	N	BSTV
Copper	mg/kg	0.628	0.851	5/5	GL-FI-015	N/A	N/A	0.85	54	N	BSTV
Iron	mg/kg	39.7	107	5/5	GL-FI-014	N/A	N/A	107	950	N	BSTV
Lead	mg/kg	0.929	0.929	1/5	GL-FI-018	0.908	1.01	0.93	N/A	**Y**	**See note [a]**
Magnesium	mg/kg	489	644	5/5	GL-FI-014	N/A	N/A	644	N/A	N	ENUT
Manganese	mg/kg	4.23	8.11	5/5	GL-FI-018	N/A	N/A	8.11	190	N	BSTV
Mercury	mg/kg	ND	ND	0/5	--	0.0901	0.101	ND	0.14	N	BSTV
Nickel	mg/kg	0.0929	0.326	3/5	GL-FI-018	3.66	3.93	0.33	27	N	BSTV
Potassium	mg/kg	3300	4460	5/5	GL-FI-017	N/A	N/A	4,460	N/A	N	ENUT
Selenium	mg/kg	0.879	1.29	5/5	GL-FI-015	N/A	N/A	1.29	6.8	N	BSTV
Silver	mg/kg	ND	ND	0/5	--	0.908	1.01	ND	6.8	N	BSTV
Sodium	mg/kg	1020	1590	5/5	GL-FI-014	N/A	N/A	1,590	N/A	N	ENUT
Thallium	mg/kg	ND	ND	0/5	--	2.28	2.51	ND	0.014	N	BSTV
Vanadium	mg/kg	0.11	0.328	5/5	GL-FI-014	N/A	N/A	0.33	6.8	N	BSTV
Zinc	mg/kg	19.6	30.3	5/5	GL-FI-017	N/A	N/A	30.3	410	N	BSTV

Notes:

[1] Maximum detected concentration was used for screening purposes.

[2] USEPA Regional Screening Levels for fish tissue (June 2011) were used as screening values for whole-body fish tissue data.

[3] Rationale codes:

ASTV = above screening toxicity value

BSTV = below screening toxicity value

ENUT = essential nutrient

[a] Potential risks associated with lead in fish tissue are evaluated with the Adult Lead Model (for adults) and the Integrated Exposure Uptake Biokinetic model (for children).

N/A = not available

Table G.5.RME
Exposure Point Concentration Summary - DePue Lake Whole-Body Fish
Reasonable Maximum Exposure
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Whole-Body Fish
Exposure Area: Lake-wide
Receptor: Angler
Receptor Age: Adult and Child

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	Median (1)	95% UCL (Distribution) (2)	Maximum Concentration	Exposure Point Concentration		
							Value	Statistic	Rationale (3)
Whole-Body Fish	Arsenic	mg/kg	0.43	0.477	0.485 (NP)	0.513	0.485	95% UCL	W - Test (2)
	Cadmium	mg/kg	0.86	0.376	NA	2.1	2.1	Maximum	Less than 5 detects
	Chromium	mg/kg	1.36	1.68	NA	1.82	1.82	Maximum	Less than 5 detects
	Lead	mg/kg	1.371	0.463	1.486 (NP)	5.54	1.371	Mean [a]	See note [a]

Notes:

mg/kg = milligrams per kilogram

NA = Not available

UCL = Upper Confidence Limit

(1) Based on detected values only.

(2) Upper Confidence Level (UCL) calculations were performed using ProUCL version 4.00.05, developed by Lockheed-Martin for USEPA.
NP = Non-parametric

(3) Shapiro-Wilk W Test used to test the normality or lognormality of the data distribution. Anderson-Darling and Kolmogorov-Smirnov Test statistics used for gamma distributions.
W - Test (2) = Shapiro-Wilk W Test indicates data are neither normally or log-normally distributed.

[a] Consistent with USEPA guidance, the arithmetic mean is used to evaluate potential lead risks using the Adult Lead Model (for adults) and Integrated Exposure Uptake Biokinetic model (for children).

Table G.5.CTE
Exposure Point Concentration Summary - DePue Lake Whole-Body Fish
Central Tendency Exposure
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Whole-Body Fish
Exposure Area: Lake-wide
Receptor: Angler
Receptor Age: Adult and Child

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	Median (1)	95% UCL (Distribution) (2)	Maximum Concentration	Exposure Point Concentration		
							Value	Statistic	Rationale (3)
Whole-Body Fish	Arsenic	mg/kg	0.43	0.477	0.485 (NP)	0.513	0.485	95% UCL	W - Test (2)
	Cadmium	mg/kg	0.86	0.376	NA	2.1	0.376	Median	Less than 5 detects
	Chromium	mg/kg	1.36	1.68	NA	1.82	1.68	Median	Less than 5 detects
	Lead	mg/kg	1.371	0.463	1.486 (NP)	5.54	1.371	Mean [a]	See note [a]

Notes:

mg/kg = milligrams per kilogram

NA = Not available

UCL = Upper Confidence Limit

(1) Based on detected values only.

(2) Upper Confidence Level (UCL) calculations were performed using ProUCL version 4.00.05, developed by Lockheed-Martin for USEPA.
NP = Non-parametric

(3) Shapiro-Wilk W Test used to test the normality or lognormality of the data distribution. Anderson-Darling and Kolmogorov-Smirnov Test statistics used for gamma distributions.
W - Test (2) = Shapiro-Wilk W Test indicates data are neither normally or log-normally distributed.

[a] Consistent with USEPA guidance, the arithmetic mean is used to evaluate potential lead risks using the Adult Lead Model (for adults) and Integrated Exposure Uptake Biokinetic model (for children).

Table G.6.RME
Exposure Point Concentration Summary - Goose Lake Whole-Body Fish
Reasonable Maximum Exposure
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Whole-Body Fish
Exposure Area: Lake-wide
Receptor: Angler
Receptor Age: Adult and Child

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	Median (1)	95% UCL (Distribution)	Maximum Concentration	Exposure Point Concentration		
							Value	Statistic	Rationale (2)
Whole-Body Fish	Arsenic	mg/kg	0.467	0.466	N/A	0.552	0.552	Maximum	Less than 5 detects
	Chromium	mg/kg	0.816	0.755	N/A	1.18	1.18	Maximum	Less than 5 detects
	Lead	mg/kg	0.929	0.929	N/A	0.929	0.929	Mean [a]	See note [a]

Notes:

(1) Based on detected values only.

(2) Upper confidence limits could not be calculated for datasets with less than 8 samples or 5 detections.

[a] Consistent with USEPA guidance, the arithmetic mean is used to evaluate potential lead risks using the Adult Lead Model (for adults) and Integrated Exposure Uptake Biokinetic model (for children).

Table G.6.CTE
Exposure Point Concentration Summary - Goose Lake Whole-Body Fish
Central Tendency Exposure
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Medium: Whole-Body Fish
Exposure Area: Lake-wide
Receptor: Angler
Receptor Age: Adult and Child

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	Median (1)	95% UCL (Distribution)	Maximum Concentration	Exposure Point Concentration		
							Value	Statistic	Rationale (2)
Whole-Body Fish	Arsenic	mg/kg	0.467	0.466	N/A	0.552	0.466	Median	Less than 5 detects
	Chromium	mg/kg	0.816	0.755	N/A	1.18	0.755	Median	Less than 5 detects
	Lead	mg/kg	0.929	0.929	N/A	0.929	0.929	Mean [a]	See note [a]

Notes:

(1) Based on detected values only.

(2) Upper confidence limits could not be calculated for datasets with less than 8 samples or 5 detections.

[a] Consistent with USEPA guidance, the arithmetic mean is used to evaluate potential lead risks using the Adult Lead Model (for adults) and Integrated Exposure Uptake Biokinetic model (for children).

Table G.7
Summary of Exposure Factors - Whole-Body Fish Consumption
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Exposure Factors	Units	Angler (Child)	Angler (Adult)
Reasonable Maximum Exposure			
Cancer Slope Factor (CSFo)	$(mg/kg\text{-}day)^{-1}$	chemical-specific	chemical-specific
Reference Dose (RfDo)	mg/kg-day	chemical-specific	chemical-specific
Exposure Point Concentration (EPC)	mg/kg	chemical-specific	chemical-specific
Body Weight (BW)	kg	15 (a)	70 (a)
Fish Ingestion Rate (IR)	kg/day	0.0125 (b,c)	0.025 (b)
Exposure Frequency (EF)	days/year	365 (a)	365 (a)
Exposure Duration (ED)	years	6 (a)	24 (a)
Fraction Ingested from Site (FI)	unitless	1 (a)	1 (a)
Relative Bioavailability Factor (RBA)[1]	unitless	chemical-specific	chemical-specific
Averaging Time (Cancer) (ATc)	days	25,550 (a)	25,550 (a)
Averaging Time (Non-Cancer) (ATnc)	days	2,190 (a)	8,760 (a)
Central Tendency Exposure			
Cancer Slope Factor (CSFo)	$(mg/kg\text{-}day)^{-1}$	chemical-specific	chemical-specific
Reference Dose (RfDo)	mg/kg-day	chemical-specific	chemical-specific
Exposure Point Concentration (EPC)	mg/kg	chemical-specific	chemical-specific
Body Weight (BW)	kg	15 (a)	70 (a)
Fish Ingestion Rate (IR)	kg/day	0.004 (b,c)	0.008 (b)
Exposure Frequency (EF)	days/year	365 (a)	365 (a)
Exposure Duration (ED)	years	6 (a)	9 (a)
Fraction Ingested from Site (FI)	unitless	0.5 (d)	0.5 (d)
Relative Bioavailability Factor (RBA)[1]	unitless	chemical-specific	chemical-specific
Averaging Time (Cancer) (ATc)	days	25,550 (a)	25,550 (a)
Averaging Time (Non-Cancer) (ATnc)	days	2,190 (a)	3,285 (a)

Note:

(1) A relative bioavailability factor of 20% is used for arsenic.

Equations:

Cancer Risk = ((CSFo * EPC * EF * ED * IR * FI * RBA)/ (ATc * BW))

Hazard Quotient = ((1/RfDo * EPC * EF * ED * IR * FI * RBA)/ (ATnc * BW))

Sources:

(a) USEPA (1989) Risk Assessment for Superfund Volume I: Human Health Evaluation Manual (Part A). EPA/540/1-89/002. December 1989.

(b) USEPA (1997) Exposure Factors Handbook. Value for recreational freshwater anglers.

(c) Child ingestion rate reflects one-half of the adult ingestion rate.

(d) Assumes only half of exposure comes from site.

Table G.8
Non-Cancer Toxicity Data -- Oral/Dermal
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Chemical of Potential Concern	Chronic/ Subchronic	Oral RfD		Oral Absorption Efficiency for Dermal (1)	Absorbed RfD for Dermal		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfD:Target Organ(s)	
		Value	Units		Value	Units			Source(s)	Date(s) (MM/DD/YYYY)
Arsenic	Chronic	3.0E-04	mg/kg-day	0.95	3.0E-04	mg/kg-day	skin	3	IRIS	2/1/1993
Cadmium (food)	Chronic	1.0E-03	mg/kg-day	0.025	2.5E-05	mg/kg-day	kidney	10	IRIS	2/1/1994
Chromium (as VI)	Chronic	3.0E-03	mg/kg-day	0.025	7.5E-05	mg/kg-day	none reported	900	IRIS	9/3/1998
Lead	Chronic	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

(1) Source: Risk Assessment Guidance for Superfund. Volume 1: Human Health E valuation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment). Section 4.2 and Exhibit 4-1. As indicated in RAGS Part E, only chemicals with an oral absorption factor <50% were adjusted to account for absorbed dose in the dermal exposure pathway.

RAGS = Risk Assessment Guidance for Superfund

IRIS = Integrated Risk Information System

mg/kg-day = millgrams per kilogram of body weight per day

NA = Not Available / Not Applicable

RFD = reference dose

Table G.9
Cancer Toxicity Data -- Oral/Dermal
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Chemical of Potential Concern	Oral Cancer Slope Factor		Oral Absorption Efficiency for Dermal (1)	Absorbed Cancer Slope Factor for Dermal		Weight of Evidence/ Cancer Guideline Description (2)	Oral CSF	
	Value	Units		Value	Units		Source(s)	Date(s) (MM/DD/YYYY)
Arsenic	1.5E+00	$(mg/kg\text{-}day)^{-1}$	0.95	1.5E+00	$(mg/kg\text{-}day)^{-1}$	A	IRIS	4/10/1998
Cadmium	NA	NA	NA	NA	NA	B1	IRIS	6/1/1992
Chromium (as VI)	NA	NA	NA	NA	NA	D	IRIS	9/3/1998
Lead	NA	NA	NA	NA	NA	B2	IRIS	11/1/1993

Notes:
(1) Source: Risk Assessment Guidance for Superfund. Volume 1: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment). Section 4.2 and Exhibit 4-1. As indicated in RAGS Part E, only chemicals with an oral absorption factor <50% were adjusted to account for absorbed dose in the dermal exposure pathway.

NA = Not Available / Not Applicable

A - Human Carcinogen

B1 - Probable Human Carcinogen - indicates limited human evidence.

B2 - Probable Human Carcinogen - indicates sufficient evidence in animals and inadequate or no evidence in humans.

D - Not classifiable as to human carcinogenicity.

CSF = cancer slope factor

RAGS = Risk Assessment Guidance for Superfund

IRIS = Integrated Risk Information System

mg/kg-day = milligrams per kilogram of body weight per day

Table G.10.RME
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake
Receptor: Angler
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Fish Tissue (Whole-Body)	Fish Tissue	DePue Lake Lake-wide	Ingestion	Arsenic	0.49	mg/kg	1.2E-05	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	2.E-05	3.5E-05	mg/kg/day	3.0E-04	mg/kg/day	1.E-01
				Cadmium	2.10	mg/kg	2.6E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.5E-04	mg/kg/day	1.0E-03	mg/kg/day	8.E-01
				Chromium	1.82	mg/kg	2.2E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	6.5E-04	mg/kg/day	3.0E-03	mg/kg/day	2.E-01
				Lead [a]	1.37	mg/kg	1.7E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.9E-04	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								2.E-05					1.E+00
		Exposure Point Total									2.E-05					1.E+00
	Exposure Medium Total										2.E-05					1.E+00
Fish Tissue Total											2.E-05					1.E+00
										Total of Receptor Risks Across All Media	2.E-05				Total of Receptor Hazards Across All Media	1.E+00

Notes:

NA = Not available

[a] Lead exposures are evaluated with the Adult Lead Model (for adults) and the Integrated Exposure Uptake Biokinetic (IEUBK) model (for children).

Total Skin HI (arsenic) =	1.E-01
Total Kidney HI (cadmium) =	8.E-01

Table G.10.CTE
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake
Receptor: Angler
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Fish Tissue	Fish Tissue	DePue Lake	Ingestion													
(Whole-Body)		Lake-wide		Arsenic	0.49	mg/kg	7.1E-07	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	1.E-06	5.5E-06	mg/kg/day	3.0E-04	mg/kg/day	2.E-02
				Cadmium	0.38	mg/kg	2.8E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.1E-05	mg/kg/day	1.0E-03	mg/kg/day	2.E-02
				Chromium	1.68	mg/kg	1.2E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	9.6E-05	mg/kg/day	3.0E-03	mg/kg/day	3.E-02
				Lead [a]	1.37	mg/kg	1.0E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.8E-05	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								1.E-06					7.E-02
		Exposure Point Total									1.E-06					7.E-02
	Exposure Medium Total										1.E-06					7.E-02
Fish Tissue Total											1.E-06					7.E-02
										Total of Receptor Risks Across All Media	1.E-06				Total of Receptor Hazards Across All Media	7.E-02

Notes:

NA = Not available

[a] Lead exposures are evaluated with the Adult Lead Model (for adults) and the Integrated Exposure Uptake Biokinetic (IEUBK) model (for children).

Total Skin HI (arsenic) =	2.E-02
Total Kidney HI (cadmium) =	2.E-02

Table G.11.RME
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake
Receptor: Angler
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Fish Tissue	Fish Tissue	DePue Lake	Ingestion													
(Whole-Body)		Lake-wide		Arsenic	0.49	mg/kg	6.9E-06	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	1.E-05	8.1E-05	mg/kg/day	3.0E-04	mg/kg/day	3.E-01
				Cadmium	2.10	mg/kg	1.5E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.8E-03	mg/kg/day	1.0E-03	mg/kg/day	2.E+00
				Chromium	1.82	mg/kg	1.3E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.5E-03	mg/kg/day	3.0E-03	mg/kg/day	5.E-01
				Lead [a]	1.37	mg/kg	9.8E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.1E-03	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								1.E-05					3.E+00
		Exposure Point Total									1.E-05					3.E+00
	Exposure Medium Total										1.E-05					3.E+00
Fish Tissue Total											1.E-05					3.E+00
										Total of Receptor Risks Across All Media	1.E-05				Total of Receptor Hazards Across All Media	3.E+00

Notes:

NA = Not available

[a] Lead exposures are evaluated with the Adult Lead Model (for adults) and the Integrated Exposure Uptake Biokinetic (IEUBK) model (for children).

Total Skin HI (arsenic) =	3.E-01
Total Kidney HI (cadmium) =	2.E+00

Table G.11.CTE
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: DePue Lake
Receptor: Angler
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Fish Tissue	Fish Tissue	DePue Lake	Ingestion													
(Whole-Body)		Lake-wide		Arsenic	0.49	mg/kg	1.1E-06	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	2.E-06	1.3E-05	mg/kg/day	3.0E-04	mg/kg/day	4.E-02
				Cadmium	0.38	mg/kg	4.3E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.0E-05	mg/kg/day	1.0E-03	mg/kg/day	5.E-02
				Chromium	1.68	mg/kg	1.9E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	2.2E-04	mg/kg/day	3.0E-03	mg/kg/day	7.E-02
				Lead [a]	1.37	mg/kg	1.6E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.8E-04	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								2.E-06					2.E-01
		Exposure Point Total									2.E-06					2.E-01
	Exposure Medium Total										2.E-06					2.E-01
Fish Tissue Total											2.E-06					2.E-01
											Total of Receptor Risks Across All Media					2.E-01

Notes:

NA = Not available

[a] Lead exposures are evaluated with the Adult Lead Model (for adults) and the Integrated Exposure Uptake Biokinetic (IEUBK) model (for children).

Total Skin HI (arsenic) =	4.E-02
Total Kidney HI (cadmium) =	5.E-02

Table G.12.RME
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Goose Lake
Receptor: Angler
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Fish Tissue	Fish Tissue	Goose Lake	Ingestion													
(Whole-Body)		Lake-wide		Arsenic	0.55	mg/kg	1.4E-05	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	2.E-05	3.9E-05	mg/kg/day	3.0E-04	mg/kg/day	1.E-01
				Chromium	1.18	mg/kg	1.4E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.2E-04	mg/kg/day	3.0E-03	mg/kg/day	1.E-01
				Lead [a]	0.93	mg/kg	1.1E-04	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	3.3E-04	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								2.E-05					3.E-01
		Exposure Point Total									2.E-05					3.E-01
	Exposure Medium Total										2.E-05					3.E-01
Fish Tissue Total											2.E-05					3.E-01
										Total of Receptor Risks Across All Media	2.E-05				Total of Receptor Hazards Across All Media	3.E-01

Notes:
NA = Not available
[a] Lead exposures are evaluated with the Adult Lead Model (for adults) and the Integrated Exposure Uptake Biokinetic (IEUBK) model (for children).

Total Skin HI (arsenic) = 1.E-01

Table G.12.CTE
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Goose Lake
Receptor: Angler
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Fish Tissue (Whole-Body)	Fish Tissue	Goose Lake Lake-wide	Ingestion	Arsenic	0.47	mg/kg	6.8E-07	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	1.E-06	5.3E-06	mg/kg/day	3.0E-04	mg/kg/day	2.E-02
				Chromium	0.76	mg/kg	5.5E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	4.3E-05	mg/kg/day	3.0E-03	mg/kg/day	1.E-02
				Lead [a]	0.93	mg/kg	6.8E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	5.3E-05	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								1.E-06					3.E-02
		Exposure Point Total									1.E-06					3.E-02
	Exposure Medium Total										1.E-06					3.E-02
Fish Tissue Total											1.E-06					3.E-02
Total of Receptor Risks Across All Media											1.E-06	Total of Receptor Hazards Across All Media				3.E-02

Notes:
NA = Not available
[a] Lead exposures are evaluated with the Adult Lead Model (for adults) and the Integrated Exposure Uptake Biokinetic (IEUBK) model (for children).

Total Skin HI (arsenic) = 2.E-02

Table G.13.RME
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Goose Lake
Receptor: Angler
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Fish Tissue	Fish Tissue	Goose Lake	Ingestion													
(Whole-Body)		Lake-wide		Arsenic	0.55	mg/kg	7.9E-06	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	1.E-05	9.2E-05	mg/kg/day	3.0E-04	mg/kg/day	3.E-01
				Chromium	1.18	mg/kg	8.4E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	9.8E-04	mg/kg/day	3.0E-03	mg/kg/day	3.E-01
				Lead [a]	0.93	mg/kg	6.6E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	7.7E-04	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								1.E-05					6.E-01
		Exposure Point Total									1.E-05					6.E-01
	Exposure Medium Total										1.E-05					6.E-01
Fish Tissue Total											1.E-05					6.E-01
Total of Receptor Risks Across All Media											1.E-05	Total of Receptor Hazards Across All Media				6.E-01

Notes:
NA = Not available
[a] Lead exposures are evaluated with the Adult Lead Model (for adults) and the Integrated Exposure Uptake Biokinetic (IEUBK) model (for children).

Total Skin HI (arsenic) = 3.E-01

Table G.13.CTE
Calculation of Chemical Cancer Risks and Non-Cancer Hazards
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Scenario Timeframe: Current/Future
Exposure Area: Goose Lake
Receptor: Angler
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Fish Tissue	Fish Tissue	Goose Lake	Ingestion													
(Whole-Body)		Lake-wide		Arsenic	0.47	mg/kg	1.1E-06	mg/kg/day	1.5E+00	$(mg/kg/day)^{-1}$	2.E-06	1.2E-05	mg/kg/day	3.0E-04	mg/kg/day	4.E-02
				Chromium	0.76	mg/kg	8.6E-06	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.0E-04	mg/kg/day	3.0E-03	mg/kg/day	3.E-02
				Lead [a]	0.93	mg/kg	1.1E-05	mg/kg/day	NA	$(mg/kg/day)^{-1}$	NA	1.2E-04	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								2.E-06					7.E-02
		Exposure Point Total									2.E-06					7.E-02
	Exposure Medium Total										2.E-06					7.E-02
Fish Tissue Total											2.E-06					7.E-02
										Total of Receptor Risks Across All Media	2.E-06				Total of Receptor Hazards Across All Media	7.E-02

Notes:
NA = Not available
[a] Lead exposures are evaluated with the Adult Lead Model (for adults) and the Integrated Exposure Uptake Biokinetic (IEUBK) model (for children).

Total Skin HI (arsenic) = 4.E-02

Table G.14
Summary of Parameter Values Used in the Adult Lead Model (ALM) for Evaluation of Lead Risks Associated with Consumption of Whole-Body Fish
OU5 Human Health Risk Assessment
Operable Unit 5 (DePue Lake Sediments and Floodplain), DePue, Illinois

Exposure Variable	Description	Units	Adult Angler - DePue Lake	Adult Angler - Goose Lake
PbF	Lead concentration in fish [1]	µg/g	1.4	0.93
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	0.9 [a]	0.9 [a]
BKSF	Biokinetic Slope Factor	µg/dL per µg/day	0.4 [a]	0.4 [a]
GSD_i	Geometric standard deviation PbB	--	1.8 [b]	1.8 [b]
PbB_0	Baseline PbB	µg/dL	1.0 [b]	1.0 [b]
IR	Fish consumption rate	g/day	8 [c]	8 [c]
AF	Absorption fraction	--	0.12 [a]	0.12 [a]
EF	Exposure frequency, Pb pathway	days/yr	365 [d]	365 [d]
AT	Averaging time, Pb pathway	days/yr	365 [a]	365 [a]

Notes:

[1] Lead concentration represents arithmetic mean of site-wide whole-body data.

[a] Default value (USEPA, 2003; 2011).

[b] Updated default central tendency estimate (CTE) for all U.S. populations (USEPA, 2009).

[c] Central tendency fish consumption rate presented in Table 4.4 of the HHRA. Represents value for recreational freshwater anglers from USEPA (1997) Exposure Factors Handbook.

[d] Exposure frequency is set at 365 days per year to account for the daily fish consumption rate.

µg/g = micrograms per gram

µg/dL = micrograms per deciliter

g/day = grams per day

References:

USEPA. 2003. Recommendations of the Technical Review Workgroup for Lead for an Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil. EPA-540-R-03-001. January 2003.

USEPA. 2009. Update of the Adult Lead Methodology's Default Baseline Blood Lead Concentration and Geometric Standard Deviation Parameters. OSWER 9200.2-82. June 26.

USEPA. 2011. Frequent Questions from Risk Assessors on the ALM. Accessed on-line 5/12/11 at http://www.epa.gov/superfund/health/contaminants/lead/almfaq.htm. Updated February 28, 2011.

Table G.15.
Summary of Parameter Values Used in the Adult Lead Model (ALM) for Evaluation of No Residential Lead Risks Associated with Exposure to Sediment
OU5 Human Health Risk Assessment
Operable Unit 5 (DePue Lake Sediments and Floodplain), DePue, Illinois

Exposure Variable	Description	Units	Adult Angler - DePue Lake [1]	Adult Angler - Goose Lake [1]
PbS	Average lead concentration in sediment [2]	ppm	318	36.2
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	0.9 [a]	0.9 [a]
BKSF	Biokinetic slope factor	µg/dL per µg/day	0.4 [a]	0.4 [a]
GSD_i	Geometric standard deviation PbB	--	1.8 [b]	1.8 [b]
PbB_0	Baseline PbB	µg/dL	1.0 [b]	1.0 [b]
$IR_{S,D}$	Sediment ingestion rate	g/day	0.050 [a]	0.050 [a]
$AF_{S,D}$	Absorption fraction, Pb in sediment	--	0.12 [a]	0.12 [a]
$EF_{S,D}$	Exposure frequency, Pb pathway	days/yr	20 [c,d]	20 [c,d]
$AT_{S,D}$	Averaging time, Pb pathway	days/yr	365 [a]	365 [a]

Notes:

[1] Exposure medium is lake-wide surface sediment (0 - 0.5 feet bgs).

[2] Consistent with the ALM guidance (USEPA, 2003; 2008), the arithmetic mean of lead concentrations was used in the ALM.

[a] Default value (USEPA, 2003).

[b] Updated default central tendency estimate (CTE) for all U.S. populations (USEPA, 2009).

[c] Average exposure frequency for anglers based on USFWS (2008) 2006 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation - Illinois.

[d] Exposure frequency is the same value used to quantify potential exposures for other chemicals in the HHRA.

µg/dL = micrograms per deciliter

g/day = grams per day

ppm = parts per million

bgs = below ground surface

References:

USEPA. 2003. Recommendations of the Technical Review Workgroup for Lead for an Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil. EPA-540-R-03-001. January 2003.

USEPA. 2008. Frequent Questions from Risk Assessors on the ALM. Accessed on-line 5/27/09 at http://www.epa.gov/superfund/health/contaminants/lead/almfaq.htm. Updated August 18, 2008.

USEPA. 2009. Update of the Adult Lead Methodology's Default Baseline Blood Lead Concentration and Geometric Standard Deviation Parameters. OSWER 9200.2-82. June 26.

Table G.16
Summary of Parameter Values Used in the Adult Lead Model (ALM) for Evaluation of Non-Residential Lead Risks Associated with Exposure to Surface Water
OU5 Human Health Risk Assessment
Operable Unit 5 (DePue Lake Sediments and Floodplain), DePue, Illinois

Exposure Variable	Description	Units	Adult Angler - DePue Lake [1]	Adult Angler - Goose Lake [1]
PbS	Lead concentration in surface water [2]	mg/L	0.0127	0.0087
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	0.9 [a]	0.9 [a]
BKSF	Biokinetic Slope Factor	µg/dL per µg/day	0.4 [a]	0.4 [a]
GSD_i	Geometric standard deviation PbB	--	1.8 [b]	1.8 [b]
PbB_0	Baseline PbB	µg/dL	1.0 [b]	1.0 [b]
IR	Surface water ingestion rate	mL/day	10 [c]	10 [c]
AF	Absorption fraction	--	0.20 [a]	0.20 [a]
EF	Exposure frequency, Pb pathway	days/yr	20 [d,e]	20 [d,e]
AT	Averaging time, Pb pathway	days/yr	365 [a]	365 [a]

Notes:

[1] Exposure medium is lake-wide surface water.

[2] Consistent with the ALM guidance (USEPA, 2003; 2008), the arithmetic mean of lead concentrations was used in the ALM.

[a] Default value (USEPA, 2003).

[b] Updated default central tendency estimate (CTE) for all U.S. populations (USEPA, 2009).

[c] IEPA's Part 302, Water Quality Standards value for incidental ingestion of surface water is 0.01 liters per hour. Assuming 1 hour of exposure per event, the daily intake rate is 0.01 liters per day, which equates to 10 grams per day (1 L = 1000 g).

[d] Average exposure frequency for anglers based on USFWS (2008) 2006 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation - Illinois.

[e] Exposure frequency is the same value used to quantify potential exposures for other chemicals in the HHRA.

µg/dL = micrograms per deciliter

L/day = liters per day

mg/L = milligrams per liter

NA = not applicable

References:

USEPA. 2003. Recommendations of the Technical Review Workgroup for Lead for an Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil. EPA-540-R-03-001. January 2003.

USEPA. 2008. Frequent Questions from Risk Assessors on the ALM. Accessed on-line 5/27/09 at http://www.epa.gov/superfund/health/contaminants/lead/almfaq.htm. Updated August 18, 2008.

USEPA. 2009. Update of the Adult Lead Methodology's Default Baseline Blood Lead Concentration and Geometric Standard Deviation Parameters. OSWER 9200.2-82. June 26.

Table G.17
Calculation of Blood Lead Concentrations (PbBs) for Adult Receptors Exposed to Lead via Whole-Body Fish Consumption
OU5 Human Health Risk Assessment
Operable Unit 5 (DePue Lake Sediments and Floodplain), DePue, Illinois

Exposure Variable	Description of Exposure Variable	Units	Adult Angler - DePue Lake	Adult Angler - Goose Lake
PbF	Lead concentration in fish	µg/g	1.4	0.93
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	0.9	0.9
BKSF	Biokinetic Slope Factor	µg/dL per µg/day	0.4	0.4
IR	Fish consumption rate	g/day	8	8
AF	Absorption fraction	--	0.12	0.12
EF	Exposure frequency	days/yr	365	365
AT	Averaging time	days/yr	365	365
PbB_{adult}	**PbB of adult worker, geometric mean**	**µg/dL**	**0.5**	**0.4**

Notes:
ALM Version date 6/21/09
See Table G.14 for sources of exposure variables.

Source: U.S. EPA (1996). Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil

Table G.18
Calculation of Blood Lead Concentrations (PbBs) for Receptors Exposed to Sediment
OU5 Human Health Risk Assessment
Operable Unit 5 (DePue Lake Sediments and Floodplain), DePue, Illinois

Exposure Variable	Description of Exposure Variable	Units	Adult Angler - DePue Lake	Adult Angler - Goose Lake
PbS	Sediment lead concentration	µg/g or ppm	318	36.2
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	0.9	0.9
BKSF	Biokinetic Slope Factor	µg/dL per µg/day	0.4	0.4
IR_S	Sediment ingestion rate	g/day	0.050	0.050
$AF_{S, D}$	Absorption fraction	--	0.12	0.12
$EF_{S, D}$	Exposure frequency	days/yr	20	20
$AT_{S, D}$	Averaging time	days/yr	365	365
PbB_{adult}	**PbB of adult/adolescent, geometric mean**	**µg/dL**	**0.04**	**0.005**

[1] Equation 1 does not apportion exposure between soil and dust ingestion (excludes W_S, K_{SD}).
When $IR_S = IR_{S+D}$ and $W_S = 1.0$, the equations yield the same $PbB_{fetal,0.95}$.

Notes:
ALM Version date 6/21/09
See Table G.15 for sources of exposure variables.

Source: U.S. EPA (1996). Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil

Table G.19
Calculation of Blood Lead Concentrations (PbBs) for Receptors Exposed to Surface Water
OU5 Human Health Risk Assessment
Operable Unit 5 (DePue Lake Sediments and Floodplain), DePue, Illinois

Exposure Variable	Description of Exposure Variable	Units	Adult Angler - Goose Lake	Adult Angler - DePue Lake
PbS	Lead concentration in surface water	mg/L	0.0127	0.0087
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	0.9	0.9
BKSF	Biokinetic Slope Factor	µg/dL per µg/day	0.4	0.4
IR	Surface water ingestion rate	mL/day	10	10
AF	Absorption fraction	--	0.20	0.20
EF	Exposure frequency	days/yr	20	20
AT	Averaging time	days/yr	365	365
PbB_{adult}	**PbB of adult worker, geometric mean**	**µg/dL**	**0.001**	**0.0004**

[1] Equation 1 does not apportion exposure between soil and dust ingestion (excludes W_S, K_{SD}).
When $IR_S = IR_{S+D}$ and $W_S = 1.0$, the equations yield the same $PbB_{fetal,0.95}$.

Notes:
ALM Version date 6/21/09
See Table G.16 for sources of exposure variables.

Source: U.S. EPA (1996). Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil

Table G.20
Summary of Blood Lead Concentrations (PbBs) for Receptors Exposed to Lead
OU5 Human Health Risk Assessment
Operable Unit 5 (DePue Lake Sediments and Floodplain), DePue, Illinois

Exposure Variable	Description of Exposure Variable	Units	Adult Angler - DePue Lake	Adult Angler - Goose Lake
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	0.9	0.9
GSD_i	Geometric standard deviation PbB	--	1.8	1.8
PbB_0	Baseline PbB	µg/dL	1.0	1.0
PbB, adult, fish	PbB of adult worker, geometric mean, fish (Table G-17)	µg/dL	0.5	0.4
PbB, adult, sediment	PbB of adult worker, geometric mean, sediment (Table G-18)	µg/dL	0.04	0.005
PbB, adult, surface water	PbB of adult worker, geometric mean, surface water (Table G-19)	µg/dL	0.001	0.0004
PbB_{adult}	**PbB of adult worker, geometric mean**	**µg/dL**	**1.6**	**1.4**
$PbB_{fetal, 0.95}$	95th percentile PbB for adolescent or fetus of adult workers	µg/dL	3.7	3.2
PbB_t	Target PbB level of concern (e.g., 10 µg/dL)	µg/dL	10.0	10.0
$P(PbB_{fetal} > PbB_t)$	**Probability that PbB > PbB_t, assuming lognormal distribution**	**%**	**0.04%**	**0.02%**

Notes:
ALM Version date 6/21/09
See Table G.14 for sources of exposure variables.

Source: U.S. EPA (1996). Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil

Table G.21
IEUBK Model for DePue Lake [1]
OU5 Human Health Risk Assessment
Operable Unit 5 (DePue Lake Sediments and Floodplain), DePue, Illinois

LEAD MODEL FOR WINDOWS Version 1.1

==========
Model Version: 1.1 Build11
User Name: Serese Marotta
Date: 2/16/2012
Site Name: DePue Lake Sediments and Floodplain
Operable Unit: 5
Run Mode: Research
==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake (µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

Table G.21
IEUBK Model for DePue Lake [1]
OU5 Human Health Risk Assessment
Operable Unit 5 (DePue Lake Sediments and Floodplain), DePue, Illinois

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 4.000 µg Pb/L

****** Soil & Dust ******

Age	Soil (µg Pb/g) [2]	House Dust (µg Pb/g)
.5-1	318.000	0.000
1-2	318.000	0.000
2-3	318.000	0.000
3-4	318.000	0.000
4-5	318.000	0.000
5-6	318.000	0.000
6-7	318.000	0.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day) [3]
.5-1	5.700
1-2	5.700
2-3	5.700
3-4	5.700
4-5	5.700
5-6	5.700
6-7	5.700

Table G.21
IEUBK Model for DePue Lake [1]
OU5 Human Health Risk Assessment
Operable Unit 5 (DePue Lake Sediments and Floodplain), DePue, Illinois

****** Maternal Contribution: Infant Model ******

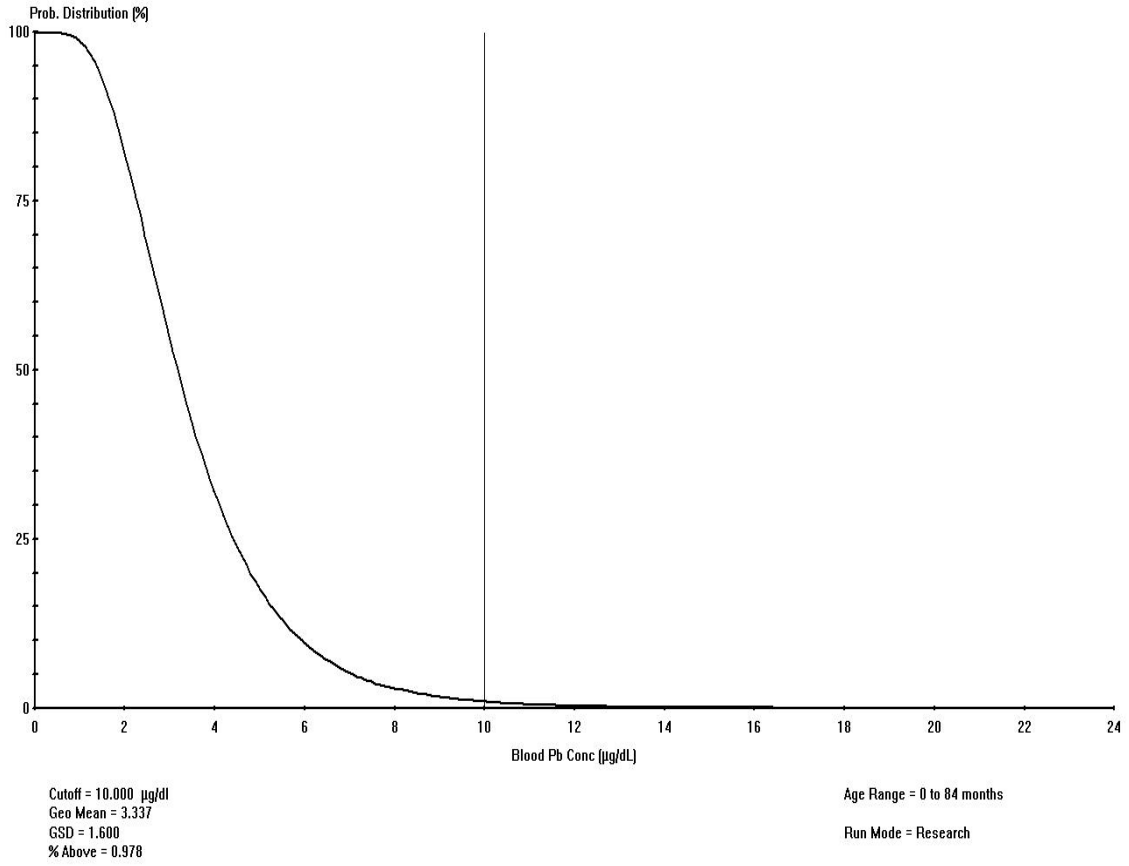
Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.039	2.619	0.368
1-2	0.034	0.899	2.615	0.918
2-3	0.062	0.989	2.645	0.965
3-4	0.067	0.957	2.673	0.994
4-5	0.067	0.929	2.716	1.048
5-6	0.093	0.983	2.734	1.113
6-7	0.093	1.069	2.745	1.136

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µ/dL)
.5-1	3.354	7.400	4.0
1-2	5.319	9.786	4.1
2-3	5.379	10.040	3.8
3-4	5.436	10.127	3.6
4-5	4.091	8.851	3.1
5-6	3.707	8.631	2.7
6-7	3.514	8.557	2.5

Table G.21
IEUBK Model for DePue Lake [1]
OU5 Human Health Risk Assessment
Operable Unit 5 (DePue Lake Sediments and Floodplain), DePue, Illinois



Notes:

[1] USEPA's Integrated Exposure Uptake Biokinetic (IEUBK) model was used to evaluate potential lead risks for young children age 0 - 84 months exposed to surface sediment, surface water, and whole-body fish tissue from DePue Lake.
[2] Represents the arithmetic mean for DePue Lake lake-wide surface sediment.
[3] Alternate intake was calculated as:
Average lake-wide surface water concentration = 0.0127 mg/L.
Surface water intake = 0.01 L/day, which equates to 12.7 ug/L x 0.01 L/day = 0.127 ug Pb/day.
Average lake-wide whole-body fish tissue concentration = 1.4 ug/g.
Fish consumption rate = 4 grams/day, which equates to 1.4 ug/g x 4 g/day = 5.6 ug Pb/day.
0.127 + 5.6 = 5.7 ug Pb/day

Table G.22
IEUBK Model for DePue Lake [1]
OU5 Human Health Risk Assessment
Operable Unit 5 (DePue Lake Sediments and Floodplain), DePue, Illinois

LEAD MODEL FOR WINDOWS Version 1.1

==========
Model Version: 1.1 Build11
User Name: Serese Marotta
Date: 2/16/2012
Site Name: DePue Lake Sediments and Floodplain
Operable Unit: 5
Run Mode: Research
==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake (µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

Table G.22
IEUBK Model for DePue Lake [1]
OU5 Human Health Risk Assessment
Operable Unit 5 (DePue Lake Sediments and Floodplain), DePue, Illinois

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 4.000 µg Pb/L

****** Soil & Dust ******

Age	Soil (µg Pb/g) [2]	House Dust (µg Pb/g)
.5-1	36.200	0.000
1-2	36.200	0.000
2-3	36.200	0.000
3-4	36.200	0.000
4-5	36.200	0.000
5-6	36.200	0.000
6-7	36.200	0.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day) [3]
.5-1	3.800
1-2	3.800
2-3	3.800
3-4	3.800
4-5	3.800
5-6	3.800
6-7	3.800

Table G.22
IEUBK Model for DePue Lake [1]
OU5 Human Health Risk Assessment
Operable Unit 5 (DePue Lake Sediments and Floodplain), DePue, Illinois

****** Maternal Contribution: Infant Model ******

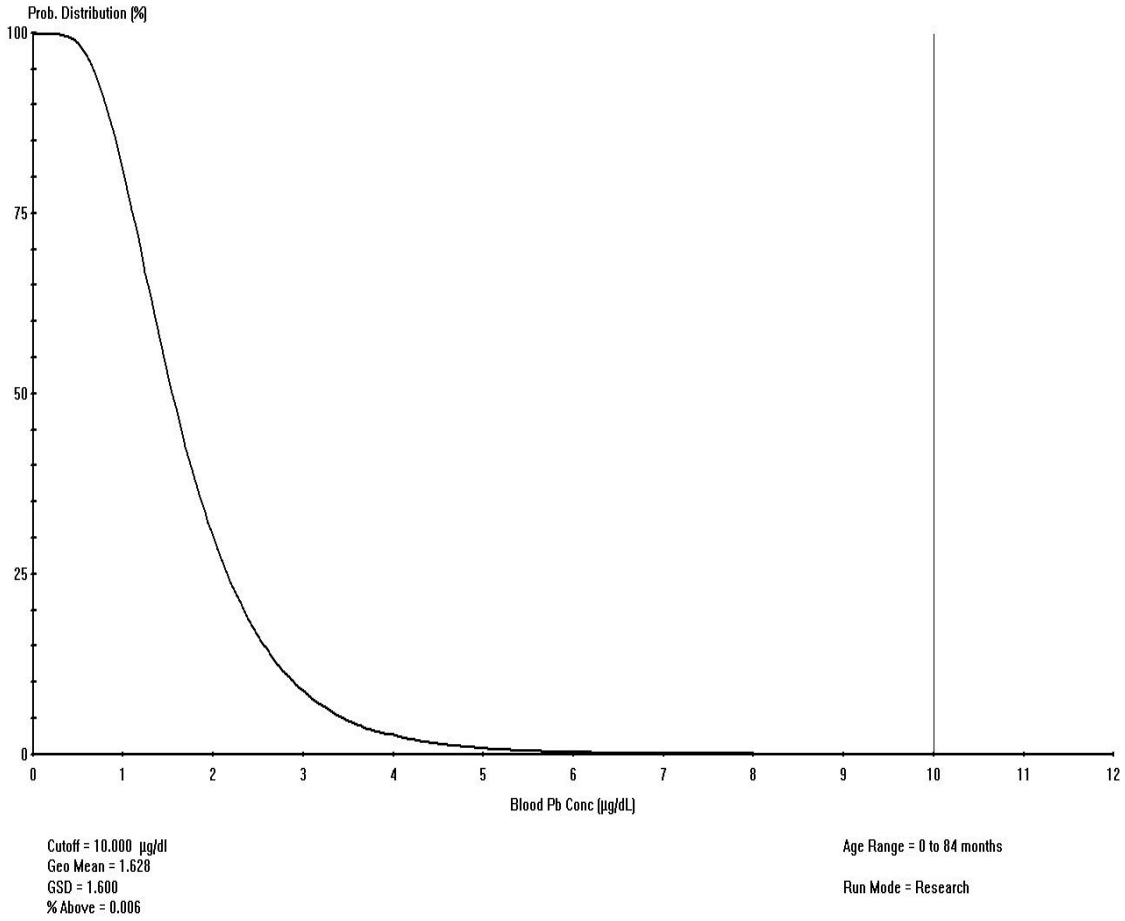
Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.084	1.822	0.384
1-2	0.034	0.943	1.829	0.963
2-3	0.062	1.030	1.838	1.006
3-4	0.067	0.991	1.847	1.030
4-5	0.067	0.952	1.855	1.074
5-6	0.093	1.003	1.860	1.135
6-7	0.093	1.088	1.862	1.157

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	0.398	3.709	2.0
1-2	0.635	4.405	1.9
2-3	0.638	4.574	1.7
3-4	0.641	4.576	1.6
4-5	0.477	4.426	1.5
5-6	0.431	4.522	1.4
6-7	0.407	4.607	1.3

Table G.22
IEUBK Model for DePue Lake [1]
OU5 Human Health Risk Assessment
Operable Unit 5 (DePue Lake Sediments and Floodplain), DePue, Illinois



Notes:

[1] USEPA's Integrated Exposure Uptake Biokinetic (IEUBK) model was used to evaluate potential lead risks for young children age 0 - 84 months exposed to surface sediment, surface water, and whole-body fish tissue from Goose Lake.

[2] Represents the arithmetic mean for Goose Lake lake-wide surface sediment.

[3] Alternate intake was calculated as:

Average lake-wide surface water concentration = 0.0087 mg/L.

Surface water intake = 0.01 L/day, which equates to 8.7 ug/L x 0.01 L/day = 0.087 ug Pb/day.

Average lake-wide whole-body fish tissue concentration = 0.93 ug/g.

Fish consumption rate = 4 grams/day, which equates to 0.93 ug/g x 4 g/day = 3.7 ug Pb/day.

0.087 + 3.7 = 3.8 ug Pb/day

Table F-1
Risk Calculations for Exposure to Carcinogenic PAHs
DePue Lake and Floodplains, Operable Unit 5
Human Health Risk Assessment

Scenario: RME
Scenario Timeframe: Current/Future
Exposure Area: Floodplain Area 1B
Exposure Medium: Surface Soil
Receptor: Trespasser, Adolescent [a]

Constituent	EPC (mg/kg)	CSF $(mg/kg/d)^{-1}$	ADAF 7 - 16 yrs	ADAF 16 - 18 yrs	CANCER RISK 7 - 16 years ELCRo	7 - 16 years ELCRd	16 - 18 years ELCRo	16 - 18 years ELCRd	Total Risk ELCRo	Total Risk ELCRd	Total ELCR
Benzo(a)anthracene	7.6E-01	0.73	3	1	3.6E-08	1.9E-08	2.6E-09	1.4E-09	3.9E-08	2.0E-08	5.9E-08
Benzo(a)pyrene	9.5E-01	7.3	3	1	4.6E-07	2.4E-07	3.3E-08	1.7E-08	4.9E-07	2.5E-07	7.4E-07
Benzo(b)fluoranthene	1.2E+00	0.73	3	1	5.8E-08	3.0E-08	4.1E-09	2.1E-09	6.2E-08	3.2E-08	9.4E-08
Benzo(k)fluoranthene	9.0E-01	0.073	3	1	4.3E-09	2.2E-09	3.1E-10	1.6E-10	4.6E-09	2.4E-09	7.0E-09
Chrysene	1.3E+00	0.0073	3	1	6.2E-10	3.2E-10	4.5E-11	2.3E-11	6.7E-10	3.5E-10	1.0E-09
Dibenz(a,h)anthracene	3.5E-01	7.3	3	1	1.7E-07	8.7E-08	1.2E-08	6.2E-09	1.8E-07	9.3E-08	2.7E-07
Indeno(1,2,3-cd)pyrene	6.5E-01	0.73	3	1	3.1E-08	1.6E-08	2.2E-09	1.2E-09	3.3E-08	1.7E-08	5.1E-08

Notes:

Cancer risk was calculated using the following equation for ingestion for each portion of life (7 - 16 years, and 16 - 18 years).
$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * IR * FI) / (ATc * BW)$
Cancer risk was calculated using the following equation for dermal for each portion of life (7 - 16 years, and 16 - 18 years).
$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * SA * AF * ABS * FI) / (ATc * BW)$
[a] Represents individual age 7 to 18 years old.
ADAF = Age dependent adjustment factor
CSF = Cancer slope factor
ELCR = Excess lifetime cancer risk
EPC = Exposure point concentration
RME = Reasonable maximum exposure

Exposure Variables:

CF	conversion factor	1.00E-06	kg/mg
EF	exposure frequency	56	days/yr
ED_{7-16}	exposure duration	9	yrs
ED_{16-18}	exposure duration	3	yrs
IR	soil ingestion rate	100	mg/day
ATc	averaging time	25550	days
BW_{7-16}	body weight	45	kg
BW_{16-18}	body weight	70	kg
SA	surface area	5700	cm^2/day
AF	adherence factor	0.07	mg/cm^2
ABS	absorption fraction	0.13	unitless
FI	fraction ingested	0.5	unitless

Table F-2
Risk Calculations for Exposure to Carcinogenic PAHs
DePue Lake and Floodplains, Operable Unit 5
Human Health Risk Assessment

Scenario: CTE
Scenario Timeframe: Current/Future
Exposure Area: Floodplain Area 1B
Exposure Medium: Surface Soil
Receptor: Trespasser, Adolescent [a]

Constituent	EPC (mg/kg)	CSF $(mg/kg/d)^{-1}$	ADAF 7 - 16 yrs	ADAF 16 - 18 yrs	CANCER RISK 7 - 16 years ELCRo	7 - 16 years ELCRd	16 - 18 years ELCRo	16 - 18 years ELCRd	Total Risk ELCRo	Total Risk ELCRd	Total ELCR
Benzo(a)anthracene	7.6E-01	0.73	3	1	6.1E-09	3.6E-09	6.5E-10	3.9E-10	6.7E-09	4.0E-09	1.1E-08
Benzo(a)pyrene	9.5E-01	7.3	3	1	7.6E-08	4.5E-08	8.1E-09	4.8E-09	8.4E-08	5.0E-08	1.3E-07
Benzo(b)fluoranthene	1.2E+00	0.73	3	1	9.6E-09	5.7E-09	1.0E-09	6.1E-10	1.1E-08	6.3E-09	1.7E-08
Benzo(k)fluoranthene	9.0E-01	0.073	3	1	7.2E-10	4.3E-10	7.7E-11	4.6E-11	8.0E-10	4.7E-10	1.3E-09
Chrysene	1.3E+00	0.0073	3	1	1.0E-10	6.2E-11	1.1E-11	6.6E-12	1.2E-10	6.8E-11	1.8E-10
Dibenz(a,h)anthracene	3.5E-01	7.3	3	1	2.8E-08	1.7E-08	3.0E-09	1.8E-09	3.1E-08	1.8E-08	4.9E-08
Indeno(1,2,3-cd)pyrene	6.5E-01	0.73	3	1	5.2E-09	3.1E-09	5.6E-10	3.3E-10	5.8E-09	3.4E-09	9.2E-09

Notes:

Cancer risk was calculated using the following equation for ingestion for each portion of life (7 - 16 years, and 16 - 18 years).
$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * IR * FI) / (ATc * BW)$

Cancer risk was calculated using the following equation for dermal for each portion of life (7 - 16 years, and 16 - 18 years).
$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * SA * AF * ABS * FI) / (ATc * BW)$

[a] Represents individual age 7 to 18 years old.

ADAF = Age dependent adjustment factor
CSF = Cancer slope factor
CTE = Central tendency exposure
ELCR = Excess lifetime cancer risk
EPC = Exposure point concentration

Exposure Variables:

CF	conversion factor	1.00E-06	kg/mg
EF	exposure frequency	28	days/yr
ED_{7-16}	exposure duration	6	yrs
ED_{16-18}	exposure duration	3	yrs
IR	soil ingestion rate	50	mg/day
ATc	averaging time	25550	days
BW_{7-16}	body weight	45	kg
BW_{16-18}	body weight	70	kg
SA	surface area	5700	cm^2/day
AF	adherence factor	0.04	mg/cm^2
ABS	absorption fraction	0.13	unitless
FI	fraction ingested	0.5	unitless

Table F-3
Risk Calculations for Exposure to Carcinogenic PAHs
DePue Lake and Floodplains, Operable Unit 5
Human Health Risk Assessment

Scenario: RME
Scenario Timeframe: Current/Future
Exposure Area: Floodplain Area 2
Exposure Medium: Surface Soil
Receptor: Trespasser, Adolescent [a]

Constituent	EPC (mg/kg)	CSF $(mg/kg/d)^{-1}$	ADAF 7 - 16 yrs	ADAF 16 - 18 yrs	CANCER RISK 7 - 16 years ELCRo	7 - 16 years ELCRd	16 - 18 years ELCRo	16 - 18 years ELCRd	Total Risk ELCRo	Total Risk ELCRd	Total ELCR
Benzo(a)anthracene	1.2E-01	0.73	3	1	5.8E-09	3.0E-09	6.4E-10	3.3E-10	6.4E-09	3.3E-09	9.7E-09
Benzo(a)pyrene	1.7E-01	7.3	3	1	8.2E-08	4.2E-08	9.1E-09	4.7E-09	9.1E-08	4.7E-08	1.4E-07
Benzo(b)fluoranthene	1.7E-01	0.73	3	1	8.2E-09	4.2E-09	9.1E-10	4.7E-10	9.1E-09	4.7E-09	1.4E-08
Benzo(k)fluoranthene	1.6E-01	0.073	3	1	7.7E-10	4.0E-10	8.5E-11	4.4E-11	8.5E-10	4.4E-10	1.3E-09
Chrysene	1.7E-01	0.0073	3	1	8.2E-11	4.2E-11	9.1E-12	4.7E-12	9.1E-11	4.7E-11	1.4E-10
Indeno(1,2,3-cd)pyrene	1.5E-01	0.73	3	1	7.2E-09	3.7E-09	8.0E-10	4.1E-10	8.0E-09	4.1E-09	1.2E-08

Notes:

Cancer risk was calculated using the following equation for ingestion for each portion of life (7 - 16 years, and 16 - 18 years).

$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * IR * FI) / (ATc * BW)$

Cancer risk was calculated using the following equation for dermal for each portion of life (7 - 16 years, and 16 - 18 years).

$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * SA * AF * ABS * FI) / (ATc * BW)$

[a] Represents individual age 7 to 18 years old.

ADAF = Age dependent adjustment factor
CSF = Cancer slope factor
ELCR = Excess lifetime cancer risk
EPC = Exposure point concentration
RME = Reasonable maximum exposure

Exposure Variables:

CF	conversion factor	1.00E-06	kg/mg
EF	exposure frequency	56	days/yr
ED_{7-16}	exposure duration	9	yrs
ED_{16-18}	exposure duration	3	yrs
IR	soil ingestion rate	100	mg/day
ATc	averaging time	25550	days
BW_{7-16}	body weight	45	kg
BW_{16-18}	body weight	70	kg
SA	surface area	5700	cm^2/day
AF	adherence factor	0.07	mg/cm^2
ABS	absorption fraction	0.13	unitless
FI	fraction ingested	0.5	unitless

Table F-4
Risk Calculations for Exposure to Carcinogenic PAHs
DePue Lake and Floodplains, Operable Unit 5
Human Health Risk Assessment

Scenario: CTE
Scenario Timeframe: Current/Future
Exposure Area: Floodplain Area 2
Exposure Medium: Surface Soil
Receptor: Trespasser, Adolescent [a]

Constituent	EPC (mg/kg)	CSF $(mg/kg/d)^{-1}$	ADAF 7 - 16 yrs	ADAF 16 - 18 yrs	CANCER RISK 7 - 16 years ELCRo	7 - 16 years ELCRd	16 - 18 years ELCRo	16 - 18 years ELCRd	Total Risk ELCRo	Total Risk ELCRd	Total ELCR
Benzo(a)anthracene	1.2E-01	0.73	3	1	9.6E-10	5.7E-10	1.6E-10	9.5E-11	1.1E-09	6.6E-10	1.8E-09
Benzo(a)pyrene	1.7E-01	7.3	3	1	1.4E-08	8.1E-09	2.3E-09	1.3E-09	1.6E-08	9.4E-09	2.5E-08
Benzo(b)fluoranthene	1.7E-01	0.73	3	1	1.4E-09	8.1E-10	2.3E-10	1.3E-10	1.6E-09	9.4E-10	2.5E-09
Benzo(k)fluoranthene	1.6E-01	0.073	3	1	1.3E-10	7.6E-11	2.1E-11	1.3E-11	1.5E-10	8.9E-11	2.4E-10
Chrysene	1.7E-01	0.0073	3	1	1.4E-11	8.1E-12	2.3E-12	1.3E-12	1.6E-11	9.4E-12	2.5E-11
Indeno(1,2,3-cd)pyrene	1.5E-01	0.73	3	1	1.2E-09	7.1E-10	2.0E-10	1.2E-10	1.4E-09	8.3E-10	2.2E-09

Notes:

Cancer risk was calculated using the following equation for ingestion for each portion of life (7 - 16 years, and 16 - 18 years).

$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * IR * FI) / (ATc * BW)$

Cancer risk was calculated using the following equation for dermal for each portion of life (7 - 16 years, and 16 - 18 years).

$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * SA * AF * ABS * FI) / (ATc * BW)$

[a] Represents individual age 7 to 18 years old.

ADAF = Age dependent adjustment factor
CSF = Cancer slope factor
CTE = Central tendency exposure
ELCR = Excess lifetime cancer risk
EPC = Exposure point concentration

Exposure Variables:

CF	conversion factor	1.00E-06	kg/mg
EF	exposure frequency	28	days/yr
ED_{7-16}	exposure duration	6	yrs
ED_{16-18}	exposure duration	3	yrs
IR	soil ingestion rate	50	mg/day
ATc	averaging time	25550	days
BW_{7-16}	body weight	45	kg
BW_{16-18}	body weight	70	kg
SA	surface area	5700	cm^2/day
AF	adherence factor	0.04	mg/cm^2
ABS	absorption fraction	0.13	unitless
FI	fraction ingested	0.5	unitless

Table F-5
Risk Calculations for Exposure to Carcinogenic PAHs
DePue Lake and Floodplains, Operable Unit 5
Human Health Risk Assessment

Scenario: RME
Scenario Timeframe: Current/Future
Exposure Area: Floodplain Area 3
Exposure Medium: Surface Soil
Receptor: Trespasser, Adolescent [a]

Constituent	EPC (mg/kg)	CSF $(mg/kg/d)^{-1}$	ADAF 7 - 16 yrs	ADAF 16 - 18 yrs	CANCER RISK 7 - 16 years ELCRo	7 - 16 years ELCRd	16 - 18 years ELCRo	16 - 18 years ELCRd	Total Risk ELCRo	Total Risk ELCRd	Total ELCR
Benzo(a)anthracene	1.2E-01	0.73	3	1	5.8E-09	3.0E-09	6.4E-10	3.3E-10	6.4E-09	3.3E-09	9.7E-09
Benzo(a)pyrene	1.4E-01	7.3	3	1	6.7E-08	3.5E-08	7.5E-09	3.9E-09	7.5E-08	3.9E-08	1.1E-07
Benzo(b)fluoranthene	2.6E-01	0.73	3	1	1.2E-08	6.5E-09	1.4E-09	7.2E-10	1.4E-08	7.2E-09	2.1E-08
Benzo(k)fluoranthene	8.0E-02	0.073	3	1	3.8E-10	2.0E-10	4.3E-11	2.2E-11	4.3E-10	2.2E-10	6.5E-10
Chrysene	1.5E-01	0.0073	3	1	7.2E-11	3.7E-11	8.0E-12	4.1E-12	8.0E-11	4.1E-11	1.2E-10
Dibenz(a,h)anthracene	3.4E-02	7.3	3	1	1.6E-08	8.5E-09	1.8E-09	9.4E-10	1.8E-08	9.4E-09	2.8E-08
Indeno(1,2,3-cd)pyrene	1.2E-01	0.73	3	1	5.8E-09	3.0E-09	6.4E-10	3.3E-10	6.4E-09	3.3E-09	9.7E-09

Notes:

Cancer risk was calculated using the following equation for ingestion for each portion of life (7 - 16 years, and 16 - 18 years).

$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * IR * FI) / (ATc * BW)$

Cancer risk was calculated using the following equation for dermal for each portion of life (7 - 16 years, and 16 - 18 years).

$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * SA * AF * ABS * FI) / (ATc * BW)$

[a] Represents individual age 7 to 18 years old.

ADAF = Age dependent adjustment factor
CSF = Cancer slope factor
ELCR = Excess lifetime cancer risk
EPC = Exposure point concentration
RME = Reasonable maximum exposure

Exposure Variables:

CF	conversion factor	1.00E-06	kg/mg
EF	exposure frequency	56	days/yr
ED_{7-16}	exposure duration	9	yrs
ED_{16-18}	exposure duration	3	yrs
IR	soil ingestion rate	100	mg/day
ATc	averaging time	25550	days
BW_{7-16}	body weight	45	kg
BW_{16-18}	body weight	70	kg
SA	surface area	5700	cm^2/day
AF	adherence factor	0.07	mg/cm^2
ABS	absorption fraction	0.13	unitless
FI	fraction ingested	0.5	unitless

Table F-6
Risk Calculations for Exposure to Carcinogenic PAHs
DePue Lake and Floodplains, Operable Unit 5
Human Health Risk Assessment

Scenario: CTE
Scenario Timeframe: Current/Future
Exposure Area: Floodplain Area 3
Exposure Medium: Surface Soil
Receptor: Trespasser, Adolescent [a]

Constituent	EPC (mg/kg)	CSF $(mg/kg/d)^{-1}$	ADAF 7 - 16 yrs	ADAF 16 - 18 yrs	CANCER RISK 7 - 16 years ELCRo	7 - 16 years ELCRd	16 - 18 years ELCRo	16 - 18 years ELCRd	Total Risk ELCRo	Total Risk ELCRd	Total ELCR
Benzo(a)anthracene	1.2E-01	0.73	3	1	9.6E-10	5.7E-10	1.6E-10	9.5E-11	1.1E-09	6.6E-10	1.8E-09
Benzo(a)pyrene	1.4E-01	7.3	3	1	1.1E-08	6.6E-09	1.9E-09	1.1E-09	1.3E-08	7.7E-09	2.1E-08
Benzo(b)fluoranthene	2.6E-01	0.73	3	1	2.1E-09	1.2E-09	3.5E-10	2.1E-10	2.4E-09	1.4E-09	3.9E-09
Benzo(k)fluoranthene	8.0E-02	0.073	3	1	6.4E-11	3.8E-11	1.1E-11	6.3E-12	7.5E-11	4.4E-11	1.2E-10
Chrysene	1.5E-01	0.0073	3	1	1.2E-11	7.1E-12	2.0E-12	1.2E-12	1.4E-11	8.3E-12	2.2E-11
Dibenz(a,h)anthracene	3.4E-02	7.3	3	1	2.7E-09	1.6E-09	4.5E-10	2.7E-10	3.2E-09	1.9E-09	5.1E-09
Indeno(1,2,3-cd)pyrene	1.2E-01	0.73	3	1	9.6E-10	5.7E-10	1.6E-10	9.5E-11	1.1E-09	6.6E-10	1.8E-09

Notes:

Cancer risk was calculated using the following equation for ingestion for each portion of life (7 - 16 years, and 16 - 18 years).
$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * IR * FI) / (ATc * BW)$
Cancer risk was calculated using the following equation for dermal for each portion of life (7 - 16 years, and 16 - 18 years).
$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * SA * AF * ABS * FI) / (ATc * BW)$
[a] Represents individual age 7 to 18 years old.
ADAF = Age dependent adjustment factor
CSF = Cancer slope factor
ELCR = Excess lifetime cancer risk
EPC = Exposure point concentration
RME = Reasonable maximum exposure

Exposure Variables:

CF	conversion factor	1.00E-06	kg/mg
EF	exposure frequency	28	days/yr
ED_{7-16}	exposure duration	6	yrs
ED_{16-18}	exposure duration	3	yrs
IR	soil ingestion rate	50	mg/day
ATc	averaging time	25550	days
BW_{7-16}	body weight	45	kg
BW_{16-18}	body weight	70	kg
SA	surface area	5700	cm^2/day
AF	adherence factor	0.04	mg/cm^2
ABS	absorption fraction	0.13	unitless
FI	fraction ingested	0.5	unitless

Table F-7
Risk Calculations for Exposure to Carcinogenic PAHs
DePue Lake and Floodplains, Operable Unit 5
Human Health Risk Assessment

Scenario: RME
Scenario Timeframe: Current/Future
Exposure Area: Sediment Area 1A
Exposure Medium: Surface Sediment, Wading
Receptor: Recreational User, Adult [a]

Constituent	EPC (mg/kg)	CSF $(mg/kg/d)^{-1}$	ADAF 7 - 16 yrs	ADAF 16 - 30 yrs	CANCER RISK 7 - 16 years ELCRo	7 - 16 years ELCRd	16 - 30 years ELCRo	16 - 30 years ELCRd	Total Risk ELCRo	Total Risk ELCRd	Total ELCR
Benzo(a)anthracene	4.0E+00	0.73	3	1	7.7E-08	1.1E-07	2.7E-08	4.1E-08	1.0E-07	1.5E-07	2.6E-07
Benzo(a)pyrene	3.4E+00	7.3	3	1	6.5E-07	9.7E-07	2.3E-07	3.5E-07	8.9E-07	1.3E-06	2.2E-06
Benzo(b)fluoranthene	2.8E+00	0.73	3	1	5.4E-08	8.0E-08	1.9E-08	2.8E-08	7.3E-08	1.1E-07	1.8E-07
Benzo(k)fluoranthene	3.0E+00	0.073	3	1	5.8E-09	8.5E-09	2.1E-09	3.0E-09	7.8E-09	1.2E-08	1.9E-08
Chrysene	3.5E+00	0.0073	3	1	6.7E-10	1.0E-09	2.4E-10	3.6E-10	9.1E-10	1.4E-09	2.3E-09
Dibenz(a,h)anthracene	5.5E-01	7.3	3	1	1.1E-07	1.6E-07	3.8E-08	5.6E-08	1.4E-07	2.1E-07	3.6E-07
Indeno(1,2,3-cd)pyrene	1.7E+00	0.73	3	1	3.3E-08	4.8E-08	1.2E-08	1.7E-08	4.4E-08	6.6E-08	1.1E-07

Notes:

Cancer risk was calculated using the following equation for ingestion for each portion of life (7 - 16 years, and 16 - 30 years).
$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * IR * FI) / (ATc * BW)$

Cancer risk was calculated using the following equation for dermal for each portion of life (7 - 16 years, and 16 - 30 years).
$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * SA * AF * ABS * FI) / (ATc * BW)$

[a] Represents individual age 7 to 30 years old.

ADAF = Age dependent adjustment factor
CSF = Cancer slope factor
ELCR = Excess lifetime cancer risk
EPC = Exposure point concentration
RME = Reasonable maximum exposure

Exposure Variables:

CF	conversion factor	1.00E-06	kg/mg
EF	exposure frequency	56	days/yr
ED_{7-16}	exposure duration	9	yrs
ED_{16-30}	exposure duration	15	yrs
IR	sediment ingestion rate	100	mg/day
ATc	averaging time	25550	days
BW_{7-16}	body weight	45	kg
BW_{16-30}	body weight	70	kg
SA	surface area	5700	cm^2/day
AF	adherence factor	0.2	mg/cm^2
ABS	absorption fraction	0.13	unitless
FI	fraction ingested	0.2	unitless

Table F-7A
Risk Calculations for Exposure to Carcinogenic PAHs
DePue Lake and Floodplains, Operable Unit 5
Human Health Risk Assessment

Scenario: RME
Scenario Timeframe: Current/Future
Exposure Area: Sediment Area 1A
Exposure Medium: Surface Sediment, Swimming
Receptor: Recreational User, Adult [a]

Constituent	EPC (mg/kg)	CSF $(mg/kg/d)^{-1}$	ADAF 7 - 16 yrs	ADAF 16 - 30 yrs	CANCER RISK 7 - 16 years ELCRo	7 - 16 years ELCRd	16 - 30 years ELCRo	16 - 30 years ELCRd	Total Risk ELCRo	Total Risk ELCRd	Total ELCR
Benzo(a)anthracene	4.0E+00	0.73	3	1	7.7E-08	3.6E-07	2.7E-08	1.3E-07	1.0E-07	4.9E-07	5.9E-07
Benzo(a)pyrene	3.4E+00	7.3	3	1	6.5E-07	3.1E-06	2.3E-07	1.1E-06	8.9E-07	4.1E-06	5.0E-06
Benzo(b)fluoranthene	2.8E+00	0.73	3	1	5.4E-08	2.5E-07	1.9E-08	9.0E-08	7.3E-08	3.4E-07	4.1E-07
Benzo(k)fluoranthene	3.0E+00	0.073	3	1	5.8E-09	2.7E-08	2.1E-09	9.6E-09	7.8E-09	3.7E-08	4.4E-08
Chrysene	3.5E+00	0.0073	3	1	6.7E-10	3.1E-09	2.4E-10	1.1E-09	9.1E-10	4.3E-09	5.2E-09
Dibenz(a,h)anthracene	5.5E-01	7.3	3	1	1.1E-07	4.9E-07	3.8E-08	1.8E-07	1.4E-07	6.7E-07	8.1E-07
Indeno(1,2,3-cd)pyrene	1.7E+00	0.73	3	1	3.3E-08	1.5E-07	1.2E-08	5.5E-08	4.4E-08	2.1E-07	2.5E-07

Notes:

Cancer risk was calculated using the following equation for ingestion for each portion of life (7 - 16 years, and 16 - 30 years).
$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * IR * FI) / (ATc * BW)$
Cancer risk was calculated using the following equation for dermal for each portion of life (7 - 16 years, and 16 - 30 years).
$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * SA * AF * ABS * FI) / (ATc * BW)$
[a] Represents individual age 7 to 30 years old.

ADAF = Age dependent adjustment factor
CSF = Cancer slope factor
ELCR = Excess lifetime cancer risk
EPC = Exposure point concentration
RME = Reasonable maximum exposure

Exposure Variables:

CF	conversion factor	1.00E-06	kg/mg
EF	exposure frequency	56	days/yr
ED_{7-16}	exposure duration	9	yrs
ED_{16-30}	exposure duration	15	yrs
IR	sediment ingestion rate	100	mg/day
ATc	averaging time	25550	days
BW_{7-16}	body weight	45	kg
BW_{16-30}	body weight	70	kg
SA	surface area	18000	cm^2/day
AF	adherence factor	0.2	mg/cm^2
ABS	absorption fraction	0.13	unitless
FI	fraction ingested	0.2	unitless

Table F-8
Risk Calculations for Exposure to Carcinogenic PAHs
DePue Lake and Floodplains, Operable Unit 5
Human Health Risk Assessment

Scenario: CTE
Scenario Timeframe: Current/Future
Exposure Area: Sediment Area 1A
Exposure Medium: Surface Sediment, Wading
Receptor: Recreational User, Adult [a]

Constituent	EPC (mg/kg)	CSF $(mg/kg/d)^{-1}$	ADAF 7 - 16 yrs	ADAF 16 - 30 yrs	CANCER RISK 7 - 16 years ELCRo	7 - 16 years ELCRd	16 - 30 years ELCRo	16 - 30 years ELCRd	Total Risk ELCRo	Total Risk ELCRd	Total ELCR
Benzo(a)anthracene	4.0E+00	0.73	3	1	1.3E-08	7.6E-09	1.4E-09	8.1E-10	1.4E-08	8.4E-09	2.3E-08
Benzo(a)pyrene	3.4E+00	7.3	3	1	1.1E-07	6.4E-08	1.2E-08	6.9E-09	1.2E-07	7.1E-08	1.9E-07
Benzo(b)fluoranthene	2.8E+00	0.73	3	1	9.0E-09	5.3E-09	9.6E-10	5.7E-10	9.9E-09	5.9E-09	1.6E-08
Benzo(k)fluoranthene	3.0E+00	0.073	3	1	9.6E-10	5.7E-10	1.0E-10	6.1E-11	1.1E-09	6.3E-10	1.7E-09
Chrysene	3.5E+00	0.0073	3	1	1.1E-10	6.6E-11	1.2E-11	7.1E-12	1.2E-10	7.4E-11	2.0E-10
Dibenz(a,h)anthracene	5.5E-01	7.3	3	1	1.8E-08	1.0E-08	1.9E-09	1.1E-09	1.9E-08	1.2E-08	3.1E-08
Indeno(1,2,3-cd)pyrene	1.7E+00	0.73	3	1	5.4E-09	3.2E-09	5.8E-10	3.5E-10	6.0E-09	3.6E-09	9.6E-09

Notes:

Cancer risk was calculated using the following equation for ingestion for each portion of life (7 - 16 years, and 16 - 30 years).
$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * IR * FI) / (ATc * BW)$

Cancer risk was calculated using the following equation for dermal for each portion of life (7 - 16 years, and 16 - 30 years).
$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * SA * AF * ABS * FI) / (ATc * BW)$

[a] Represents individual age 7 to 30 years old.

ADAF = Age dependent adjustment factor
CSF = Cancer slope factor
ELCR = Excess lifetime cancer risk
EPC = Exposure point concentration
RME = Reasonable maximum exposure

Exposure Variables:

CF	conversion factor	1.00E-06	kg/mg
EF	exposure frequency	28	days/yr
ED_{7-16}	exposure duration	6	yrs
ED_{16-30}	exposure duration	3	yrs
IR	sediment ingestion rate	50	mg/day
ATc	averaging time	25550	days
BW_{7-16}	body weight	45	kg
BW_{16-30}	body weight	70	kg
SA	surface area	5700	cm^2/day
AF	adherence factor	0.04	mg/cm^2
ABS	absorption fraction	0.13	unitless
FI	fraction ingested	0.2	unitless

Table F-8A
Risk Calculations for Exposure to Carcinogenic PAHs
DePue Lake and Floodplains, Operable Unit 5
Human Health Risk Assessment

Scenario: CTE
Scenario Timeframe: Current/Future
Exposure Area: Sediment Area 1A
Exposure Medium: Surface Sediment, Swimming
Receptor: Recreational User, Adult [a]

Constituent	EPC (mg/kg)	CSF $(mg/kg/d)^{-1}$	ADAF 7 - 16 yrs	ADAF 16 - 30 yrs	CANCER RISK 7 - 16 years ELCRo	7 - 16 years ELCRd	16 - 30 years ELCRo	16 - 30 years ELCRd	Total Risk ELCRo	Total Risk ELCRd	Total ELCR
Benzo(a)anthracene	4.0E+00	0.73	3	1	1.3E-08	2.4E-08	1.4E-09	2.6E-09	1.4E-08	2.7E-08	4.1E-08
Benzo(a)pyrene	3.4E+00	7.3	3	1	1.1E-07	2.0E-07	1.2E-08	2.2E-08	1.2E-07	2.3E-07	3.5E-07
Benzo(b)fluoranthene	2.8E+00	0.73	3	1	9.0E-09	1.7E-08	9.6E-10	1.8E-09	9.9E-09	1.9E-08	2.8E-08
Benzo(k)fluoranthene	3.0E+00	0.073	3	1	9.6E-10	1.8E-09	1.0E-10	1.9E-10	1.1E-09	2.0E-09	3.1E-09
Chrysene	3.5E+00	0.0073	3	1	1.1E-10	2.1E-10	1.2E-11	2.2E-11	1.2E-10	2.3E-10	3.6E-10
Dibenz(a,h)anthracene	5.5E-01	7.3	3	1	1.8E-08	3.3E-08	1.9E-09	3.5E-09	1.9E-08	3.6E-08	5.6E-08
Indeno(1,2,3-cd)pyrene	1.7E+00	0.73	3	1	5.4E-09	1.0E-08	5.8E-10	1.1E-09	6.0E-09	1.1E-08	1.7E-08

Notes:

Cancer risk was calculated using the following equation for ingestion for each portion of life (7 - 16 years, and 16 - 30 years).
$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * IR * FI) / (ATc * BW)$
Cancer risk was calculated using the following equation for dermal for each portion of life (7 - 16 years, and 16 - 30 years).
$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * SA * AF * ABS * FI) / (ATc * BW)$
[a] Represents individual age 7 to 30 years old.
ADAF = Age dependent adjustment factor
CSF = Cancer slope factor
ELCR = Excess lifetime cancer risk
EPC = Exposure point concentration
RME = Reasonable maximum exposure

Exposure Variables:

CF	conversion factor	1.00E-06	kg/mg
EF	exposure frequency	28	days/yr
ED_{7-16}	exposure duration	6	yrs
ED_{16-30}	exposure duration	3	yrs
IR	sediment ingestion rate	50	mg/day
ATc	averaging time	25550	days
BW_{7-16}	body weight	45	kg
BW_{16-30}	body weight	70	kg
SA	surface area	18000	cm^2/day
AF	adherence factor	0.04	mg/cm^2
ABS	absorption fraction	0.13	unitless
FI	fraction ingested	0.2	unitless

Table F-9
Risk Calculations for Exposure to Carcinogenic PAHs
DePue Lake and Floodplains, Operable Unit 5
Human Health Risk Assessment

Scenario: RME
Scenario Timeframe: Current/Future
Exposure Area: Sediment Area 1A
Exposure Medium: Surface Sediment, Wading
Receptor: Recreational User, Child [a]

Constituent	EPC (mg/kg)	CSF $(mg/kg/d)^{-1}$	ADAF 0 - 2 yrs	ADAF 2 - 6 yrs	CANCER RISK 0 - 2 years ELCRo	0 - 2 years ELCRd	2 - 6 years ELCRo	2 - 6 years ELCRd	Total Risk ELCRo	Total Risk ELCRd	Total ELCR
Benzo(a)anthracene	4.0E+00	0.73	10	3	5.3E-07	1.7E-07	2.0E-07	6.5E-08	7.4E-07	2.3E-07	9.7E-07
Benzo(a)pyrene	3.4E+00	7.3	10	3	4.5E-06	1.4E-06	1.7E-06	5.5E-07	6.3E-06	2.0E-06	8.2E-06
Benzo(b)fluoranthene	2.8E+00	0.73	10	3	3.7E-07	1.2E-07	1.4E-07	4.5E-08	5.2E-07	1.6E-07	6.8E-07
Benzo(k)fluoranthene	3.0E+00	0.073	10	3	4.0E-08	1.3E-08	1.5E-08	4.9E-09	5.5E-08	1.8E-08	7.3E-08
Chrysene	3.5E+00	0.0073	10	3	4.7E-09	1.5E-09	1.8E-09	5.7E-10	6.4E-09	2.0E-09	8.5E-09
Dibenz(a,h)anthracene	5.5E-01	7.3	10	3	7.3E-07	2.3E-07	2.8E-07	8.9E-08	1.0E-06	3.2E-07	1.3E-06
Indeno(1,2,3-cd)pyrene	1.7E+00	0.73	10	3	2.3E-07	7.2E-08	8.7E-08	2.8E-08	3.1E-07	9.9E-08	4.1E-07

Notes:

Cancer risk was calculated using the following equation for ingestion for each portion of life (0 - 2 years, and 2 - 6 years).

$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * IR * FI) / (ATc * BW)$

Cancer risk was calculated using the following equation for dermal for each portion of life (0 - 2 years, and 2 - 6 years).

$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * SA * AF * ABS * FI) / (ATc * BW)$

[a] Represents individual age 0 to 6 years old.

ADAF = Age dependent adjustment factor
CSF = Cancer slope factor
ELCR = Excess lifetime cancer risk
EPC = Exposure point concentration
RME = Reasonable maximum exposure

Exposure Variables:

CF	conversion factor	1.00E-06	kg/mg
EF	exposure frequency	56	days/yr
ED_{0-2}	exposure duration	2	yrs
ED_{2-6}	exposure duration	4	yrs
IR	sediment ingestion rate	200	mg/day
ATc	averaging time	25550	days
BW_{0-2}	body weight	9.625	kg
BW_{2-6}	body weight	15	kg
SA	surface area	2440	cm^2/day
AF	adherence factor	0.2	mg/cm^2
ABS	absorption fraction	0.13	unitless
FI	fraction ingested	0.2	unitless

Table F-9A
Risk Calculations for Exposure to Carcinogenic PAHs
DePue Lake and Floodplains, Operable Unit 5
Human Health Risk Assessment

Scenario: RME
Scenario Timeframe: Current/Future
Exposure Area: Sediment Area 1A
Exposure Medium: Surface Sediment, Swimming
Receptor: Recreational User, Child [a]

Constituent	EPC (mg/kg)	CSF $(mg/kg/d)^{-1}$	ADAF 0 - 2 yrs	ADAF 2 - 6 yrs	CANCER RISK 0 - 2 years ELCRo	0 - 2 years ELCRd	2 - 6 years ELCRo	2 - 6 years ELCRd	Total Risk ELCRo	Total Risk ELCRd	Total ELCR
Benzo(a)anthracene	4.0E+00	0.73	10	3	5.3E-07	4.6E-07	2.0E-07	1.8E-07	7.4E-07	6.3E-07	1.4E-06
Benzo(a)pyrene	3.4E+00	7.3	10	3	4.5E-06	3.9E-06	1.7E-06	1.5E-06	6.3E-06	5.4E-06	1.2E-05
Benzo(b)fluoranthene	2.8E+00	0.73	10	3	3.7E-07	3.2E-07	1.4E-07	1.2E-07	5.2E-07	4.4E-07	9.6E-07
Benzo(k)fluoranthene	3.0E+00	0.073	10	3	4.0E-08	3.4E-08	1.5E-08	1.3E-08	5.5E-08	4.7E-08	1.0E-07
Chrysene	3.5E+00	0.0073	10	3	4.7E-09	4.0E-09	1.8E-09	1.5E-09	6.4E-09	5.5E-09	1.2E-08
Dibenz(a,h)anthracene	5.5E-01	7.3	10	3	7.3E-07	6.3E-07	2.8E-07	2.4E-07	1.0E-06	8.7E-07	1.9E-06
Indeno(1,2,3-cd)pyrene	1.7E+00	0.73	10	3	2.3E-07	1.9E-07	8.7E-08	7.5E-08	3.1E-07	2.7E-07	5.8E-07

Notes:

Cancer risk was calculated using the following equation for ingestion for each portion of life (0 - 2 years, and 2 - 6 years).
$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * IR * FI) / (ATc * BW)$

Cancer risk was calculated using the following equation for dermal for each portion of life (0 - 2 years, and 2 - 6 years).
$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * SA * AF * ABS * FI) / (ATc * BW)$

[a] Represents individual age 0 to 6 years old.

ADAF = Age dependent adjustment factor
CSF = Cancer slope factor
ELCR = Excess lifetime cancer risk
EPC = Exposure point concentration
RME = Reasonable maximum exposure

Exposure Variables:

CF	conversion factor	1.00E-06	kg/mg
EF	exposure frequency	56	days/yr
ED_{0-2}	exposure duration	2	yrs
ED_{2-6}	exposure duration	4	yrs
IR	sediment ingestion rate	200	mg/day
ATc	averaging time	25550	days
BW_{0-2}	body weight	9.625	kg
BW_{2-6}	body weight	15	kg
SA	surface area	6600	cm^2/day
AF	adherence factor	0.2	mg/cm^2
ABS	absorption fraction	0.13	unitless
FI	fraction ingested	0.2	unitless

Table F-10
Risk Calculations for Exposure to Carcinogenic PAHs
DePue Lake and Floodplains, Operable Unit 5
Human Health Risk Assessment

Scenario: CTE
Scenario Timeframe: Current/Future
Exposure Area: Sediment Area 1A
Exposure Medium: Surface Sediment, Wading
Receptor: Recreational User, Child [a]

Constituent	EPC (mg/kg)	CSF $(mg/kg/d)^{-1}$	ADAF 0 - 2 yrs	ADAF 2 - 6 yrs	CANCER RISK 0 - 2 years ELCRo	0 - 2 years ELCRd	2 - 6 years ELCRo	2 - 6 years ELCRd	Total Risk ELCRo	Total Risk ELCRd	Total ELCR
Benzo(a)anthracene	4.0E+00	0.73	10	3	1.3E-07	1.0E-10	5.1E-08	4.0E-11	1.8E-07	1.4E-10	1.8E-07
Benzo(a)pyrene	3.4E+00	7.3	10	3	1.1E-06	8.8E-10	4.4E-07	3.4E-10	1.6E-06	1.2E-09	1.6E-06
Benzo(b)fluoranthene	2.8E+00	0.73	10	3	9.3E-08	7.3E-11	3.6E-08	2.8E-11	1.3E-07	1.0E-10	1.3E-07
Benzo(k)fluoranthene	3.0E+00	0.073	10	3	1.0E-08	7.8E-12	3.8E-09	3.0E-12	1.4E-08	1.1E-11	1.4E-08
Chrysene	3.5E+00	0.0073	10	3	1.2E-09	9.1E-13	4.5E-10	3.5E-13	1.6E-09	1.3E-12	1.6E-09
Dibenz(a,h)anthracene	5.5E-01	7.3	10	3	1.8E-07	1.4E-10	7.0E-08	5.5E-11	2.5E-07	2.0E-10	2.5E-07
Indeno(1,2,3-cd)pyrene	1.7E+00	0.73	10	3	5.7E-08	4.4E-11	2.2E-08	1.7E-11	7.8E-08	6.1E-11	7.8E-08

Notes:

Cancer risk was calculated using the following equation for ingestion for each portion of life (0 - 2 years, and 2 - 6 years).
$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * IR * FI) / (ATc * BW)$
Cancer risk was calculated using the following equation for dermal for each portion of life (0 - 2 years, and 2 - 6 years).
$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * SA * AF * ABS * FI) / (ATc * BW)$
[a] Represents individual age 0 to 6 years old.
ADAF = Age dependent adjustment factor
CSF = Cancer slope factor
ELCR = Excess lifetime cancer risk
EPC = Exposure point concentration
RME = Reasonable maximum exposure

Exposure Variables:

CF	conversion factor	1.00E-06	kg/mg
EF	exposure frequency	28	days/yr
ED_{0-2}	exposure duration	2	yrs
ED_{2-6}	exposure duration	4	yrs
IR	sediment ingestion rate	100	mg/day
ATc	averaging time	25550	days
BW_{0-2}	body weight	9.625	kg
BW_{2-6}	body weight	15	kg
AF	adherence factor	0.04	mg/cm^2
ABS	absorption fraction	0.13	unitless
FI	fraction ingested	0.2	unitless

Table F-10A
Risk Calculations for Exposure to Carcinogenic PAHs
DePue Lake and Floodplains, Operable Unit 5
Human Health Risk Assessment

Scenario: CTE
Scenario Timeframe: Current/Future
Exposure Area: Sediment Area 1A
Exposure Medium: Surface Sediment, Swimming
Receptor: Recreational User, Child [a]

Constituent	EPC (mg/kg)	CSF $(mg/kg/d)^{-1}$	ADAF 0 - 2 yrs	ADAF 2 - 6 yrs	CANCER RISK 0 - 2 years ELCRo	0 - 2 years ELCRd	2 - 6 years ELCRo	2 - 6 years ELCRd	Total Risk ELCRo	Total Risk ELCRd	Total ELCR
Benzo(a)anthracene	4.0E+00	0.73	10	3	1.3E-07	4.6E-08	5.1E-08	1.8E-08	1.8E-07	6.3E-08	2.5E-07
Benzo(a)pyrene	3.4E+00	7.3	10	3	1.1E-06	3.9E-07	4.4E-07	1.5E-07	1.6E-06	5.4E-07	2.1E-06
Benzo(b)fluoranthene	2.8E+00	0.73	10	3	9.3E-08	3.2E-08	3.6E-08	1.2E-08	1.3E-07	4.4E-08	1.7E-07
Benzo(k)fluoranthene	3.0E+00	0.073	10	3	1.0E-08	3.4E-09	3.8E-09	1.3E-09	1.4E-08	4.7E-09	1.9E-08
Chrysene	3.5E+00	0.0073	10	3	1.2E-09	4.0E-10	4.5E-10	1.5E-10	1.6E-09	5.5E-10	2.2E-09
Dibenz(a,h)anthracene	5.5E-01	7.3	10	3	1.8E-07	6.3E-08	7.0E-08	2.4E-08	2.5E-07	8.7E-08	3.4E-07
Indeno(1,2,3-cd)pyrene	1.7E+00	0.73	10	3	5.7E-08	1.9E-08	2.2E-08	7.5E-09	7.8E-08	2.7E-08	1.1E-07

Notes:

Cancer risk was calculated using the following equation for ingestion for each portion of life (0 - 2 years, and 2 - 6 years).

$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * IR * FI) / (ATc * BW)$

Cancer risk was calculated using the following equation for dermal for each portion of life (0 - 2 years, and 2 - 6 years).

$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * SA * AF * ABS * FI) / (ATc * BW)$

[a] Represents individual age 0 to 6 years old.

ADAF = Age dependent adjustment factor
CSF = Cancer slope factor
ELCR = Excess lifetime cancer risk
EPC = Exposure point concentration
RME = Reasonable maximum exposure

Exposure Variables:

CF	conversion factor	1.00E-06	kg/mg
EF	exposure frequency	28	days/yr
ED_{0-2}	exposure duration	2	yrs
ED_{2-6}	exposure duration	4	yrs
IR	sediment ingestion rate	100	mg/day
ATc	averaging time	25550	days
BW_{0-2}	body weight	9.625	kg
BW_{2-6}	body weight	15	kg
SA	surface area	6600	cm^2/day
AF	adherence factor	0.04	mg/cm^2
ABS	absorption fraction	0.13	unitless
FI	fraction ingested	0.2	unitless

Table F-11
Risk Calculations for Exposure to Carcinogenic PAHs
DePue Lake and Floodplains, Operable Unit 5
Human Health Risk Assessment

Scenario: RME
Scenario Timeframe: Current/Future
Exposure Area: Lake-Wide Sediment
Exposure Medium: Surface Sediment
Receptor: Boater, Adult [a]

Constituent	EPC (mg/kg)	CSF $(mg/kg/d)^{-1}$	ADAF 7 - 16 yrs	ADAF 16 - 30 yrs	CANCER RISK 7 - 16 years ELCRo	7 - 16 years ELCRd	16 - 30 years ELCRo	16 - 30 years ELCRd	Total Risk ELCRo	Total Risk ELCRd	Total ELCR
Benzo(a)anthracene	1.9E-01	0.73	3	1	4.3E-09	6.3E-09	1.5E-09	2.3E-09	5.8E-09	8.6E-09	1.4E-08
Benzo(a)pyrene	1.6E+00	7.3	3	1	3.7E-07	5.4E-07	1.3E-07	1.9E-07	5.0E-07	7.4E-07	1.2E-06
Benzo(b)fluoranthene	2.4E-01	0.73	3	1	5.4E-09	8.0E-09	1.9E-09	2.9E-09	7.4E-09	1.1E-08	1.8E-08
Benzo(k)fluoranthene	1.5E+00	0.073	3	1	3.3E-09	4.9E-09	1.2E-09	1.7E-09	4.5E-09	6.6E-09	1.1E-08
Chrysene	1.7E+00	0.0073	3	1	3.9E-10	5.7E-10	1.4E-10	2.0E-10	5.2E-10	7.7E-10	1.3E-09
Dibenz(a,h)anthracene	2.7E-01	7.3	3	1	6.1E-08	9.0E-08	2.2E-08	3.2E-08	8.2E-08	1.2E-07	2.0E-07
Indeno(1,2,3-cd)pyrene	8.6E-01	0.73	3	1	1.9E-08	2.9E-08	6.9E-09	1.0E-08	2.6E-08	3.9E-08	6.5E-08

Notes:

Cancer risk was calculated using the following equation for ingestion for each portion of life (7 - 16 years, and 16 - 30 years).

$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * IR * FI) / (ATc * BW)$

Cancer risk was calculated using the following equation for dermal for each portion of life (7 - 16 years, and 16 - 30 years).

$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * SA * AF * ABS * FI) / (ATc * BW)$

[a] Represents individual age 7 to 30 years old.

ADAF = Age dependent adjustment factor
CSF = Cancer slope factor
ELCR = Excess lifetime cancer risk
EPC = Exposure point concentration
RME = Reasonable maximum exposure

Exposure Variables:

CF	conversion factor	1.00E-06	kg/mg
EF	exposure frequency	26	days/yr
ED_{7-16}	exposure duration	9	yrs
ED_{16-30}	exposure duration	15	yrs
IR	sediment ingestion rate	100	mg/day
ATc	averaging time	25550	days
BW_{7-16}	body weight	45	kg
BW_{16-30}	body weight	70	kg
SA	surface area	5700	cm^2/day
AF	adherence factor	0.2	mg/cm^2
ABS	absorption fraction	0.13	unitless
FI	fraction ingested	0.5	unitless

Table F-12
Risk Calculations for Exposure to Carcinogenic PAHs
DePue Lake and Floodplains, Operable Unit 5
Human Health Risk Assessment

Scenario: CTE
Scenario Timeframe: Current/Future
Exposure Area: Lake-Wide Sediment
Exposure Medium: Surface Sediment
Receptor: Boater, Adult [a]

Constituent	EPC (mg/kg)	CSF $(mg/kg/d)^{-1}$	ADAF 7 - 16 yrs	ADAF 16 - 30 yrs	CANCER RISK 7 - 16 years ELCRo	7 - 16 years ELCRd	16 - 30 years ELCRo	16 - 30 years ELCRd	Total Risk ELCRo	Total Risk ELCRd	Total ELCR
Benzo(a)anthracene	1.9E-01	0.73	3	1	7.1E-10	4.2E-10	7.6E-11	4.5E-11	7.9E-10	4.7E-10	1.3E-09
Benzo(a)pyrene	1.6E+00	7.3	3	1	6.1E-08	3.6E-08	6.6E-09	3.9E-09	6.8E-08	4.0E-08	1.1E-07
Benzo(b)fluoranthene	2.4E-01	0.73	3	1	9.0E-10	5.4E-10	9.7E-11	5.7E-11	1.0E-09	5.9E-10	1.6E-09
Benzo(k)fluoranthene	1.5E+00	0.073	3	1	5.5E-10	3.3E-10	5.9E-11	3.5E-11	6.1E-10	3.6E-10	9.7E-10
Chrysene	1.7E+00	0.0073	3	1	6.4E-11	3.8E-11	6.9E-12	4.1E-12	7.1E-11	4.2E-11	1.1E-10
Dibenz(a,h)anthracene	2.7E-01	7.3	3	1	1.0E-08	6.0E-09	1.1E-09	6.4E-10	1.1E-08	6.6E-09	1.8E-08
Indeno(1,2,3-cd)pyrene	8.6E-01	0.73	3	1	3.2E-09	1.9E-09	3.4E-10	2.0E-10	3.5E-09	2.1E-09	5.7E-09

Notes:

Cancer risk was calculated using the following equation for ingestion for each portion of life (7 - 16 years, and 16 - 30 years).
$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * IR * FI) / (ATc * BW)$
Cancer risk was calculated using the following equation for dermal for each portion of life (7 - 16 years, and 16 - 30 years).
$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * SA * AF * ABS * FI) / (ATc * BW)$
[a] Represents individual age 7 to 30 years old.
ADAF = Age dependent adjustment factor
CSF = Cancer slope factor
ELCR = Excess lifetime cancer risk
EPC = Exposure point concentration
RME = Reasonable maximum exposure

Exposure Variables:

CF	conversion factor	1.00E-06	kg/mg
EF	exposure frequency	13	days/yr
ED_{7-16}	exposure duration	6	yrs
ED_{16-30}	exposure duration	3	yrs
IR	sediment ingestion rate	50	mg/day
ATc	averaging time	25550	days
BW_{7-16}	body weight	45	kg
BW_{16-30}	body weight	70	kg
SA	surface area	5700	cm^2/day
AF	adherence factor	0.04	mg/cm^2
ABS	absorption fraction	0.13	unitless
FI	fraction ingested	0.5	unitless

Table F-13
Risk Calculations for Exposure to Carcinogenic PAHs
DePue Lake and Floodplains, Operable Unit 5
Human Health Risk Assessment

Scenario: RME
Scenario Timeframe: Current/Future
Exposure Area: Lake-Wide Sediment
Exposure Medium: Surface Sediment
Receptor: Boater, Child [a]

Constituent	EPC (mg/kg)	CSF $(mg/kg/d)^{-1}$	ADAF 0 - 2 yrs	ADAF 2 - 6 yrs	CANCER RISK 0 - 2 years ELCRo	0 - 2 years ELCRd	2 - 6 years ELCRo	2 - 6 years ELCRd	Total Risk ELCRo	Total Risk ELCRd	Total ELCR
Benzo(a)anthracene	1.9E-01	0.73	10	3	3.0E-08	9.4E-09	1.1E-08	3.6E-09	4.1E-08	1.3E-08	5.4E-08
Benzo(a)pyrene	1.6E+00	7.3	10	3	2.5E-06	8.1E-07	9.8E-07	3.1E-07	3.5E-06	1.1E-06	4.6E-06
Benzo(b)fluoranthene	2.4E-01	0.73	10	3	3.8E-08	1.2E-08	1.4E-08	4.6E-09	5.2E-08	1.7E-08	6.9E-08
Benzo(k)fluoranthene	1.5E+00	0.073	10	3	2.3E-08	7.2E-09	8.8E-09	2.8E-09	3.2E-08	1.0E-08	4.2E-08
Chrysene	1.7E+00	0.0073	10	3	2.7E-09	8.5E-10	1.0E-09	3.3E-10	3.7E-09	1.2E-09	4.9E-09
Dibenz(a,h)anthracene	2.7E-01	7.3	10	3	4.2E-07	1.3E-07	1.6E-07	5.1E-08	5.8E-07	1.8E-07	7.7E-07
Indeno(1,2,3-cd)pyrene	8.6E-01	0.73	10	3	1.3E-07	4.2E-08	5.1E-08	1.6E-08	1.8E-07	5.9E-08	2.4E-07

Notes:

Cancer risk was calculated using the following equation for ingestion for each portion of life (0 - 2 years, and 2 - 6 years).
$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * IR * FI) / (ATc * BW)$

Cancer risk was calculated using the following equation for dermal for each portion of life (0 - 2 years, and 2 - 6 years).
$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * SA * AF * ABS * FI) / (ATc * BW)$

[a] Represents individual age 0 to 6 years old.

ADAF = Age dependent adjustment factor
CSF = Cancer slope factor
ELCR = Excess lifetime cancer risk
EPC = Exposure point concentration
RME = Reasonable maximum exposure

Exposure Variables:

CF	conversion factor	1.00E-06	kg/mg
EF	exposure frequency	26	days/yr
ED_{0-2}	exposure duration	2	yrs
ED_{2-6}	exposure duration	4	yrs
IR	sediment ingestion rate	200	mg/day
ATc	averaging time	25550	days
BW_{0-2}	body weight	9.625	kg
BW_{2-6}	body weight	15	kg
SA	surface area	2440	cm^2/day
AF	adherence factor	0.2	mg/cm^2
ABS	absorption fraction	0.13	unitless
FI	fraction ingested	0.5	unitless

Table F-14
Risk Calculations for Exposure to Carcinogenic PAHs
DePue Lake and Floodplains, Operable Unit 5
Human Health Risk Assessment

Scenario: CTE
Scenario Timeframe: Current/Future
Exposure Area: Lake-Wide Sediment
Exposure Medium: Surface Sediment
Receptor: Boater, Child [a]

Constituent	EPC (mg/kg)	CSF $(mg/kg/d)^{-1}$	ADAF 0 - 2 yrs	ADAF 2 - 6 yrs	CANCER RISK 0 - 2 years ELCRo	0 - 2 years ELCRd	2 - 6 years ELCRo	2 - 6 years ELCRd	Total Risk ELCRo	Total Risk ELCRd	Total ELCR
Benzo(a)anthracene	1.9E-01	0.73	10	3	7.4E-09	6.0E-10	2.8E-09	3.6E-10	1.0E-08	9.6E-10	1.1E-08
Benzo(a)pyrene	1.6E+00	7.3	10	3	6.4E-07	5.2E-08	2.4E-07	3.1E-08	8.8E-07	8.3E-08	9.6E-07
Benzo(b)fluoranthene	2.4E-01	0.73	10	3	9.4E-09	7.6E-10	3.6E-09	4.6E-10	1.3E-08	1.2E-09	1.4E-08
Benzo(k)fluoranthene	1.5E+00	0.073	10	3	5.7E-09	4.6E-10	2.2E-09	2.8E-10	7.9E-09	7.4E-10	8.6E-09
Chrysene	1.7E+00	0.0073	10	3	6.7E-10	5.4E-11	2.6E-10	3.3E-11	9.2E-10	8.7E-11	1.0E-09
Dibenz(a,h)anthracene	2.7E-01	7.3	10	3	1.1E-07	8.6E-09	4.0E-08	5.1E-09	1.5E-07	1.4E-08	1.6E-07
Indeno(1,2,3-cd)pyrene	8.6E-01	0.73	10	3	3.3E-08	2.7E-09	1.3E-08	1.6E-09	4.6E-08	4.3E-09	5.0E-08

Notes:

Cancer risk was calculated using the following equation for ingestion for each portion of life (0 - 2 years, and 2 - 6 years).
$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * IR * FI) / (ATc * BW)$

Cancer risk was calculated using the following equation for dermal for each portion of life (0 - 2 years, and 2 - 6 years).
$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * SA * AF * ABS * FI) / (ATc * BW)$

[a] Represents individual age 0 to 6 years old.

ADAF = Age dependent adjustment factor
CSF = Cancer slope factor
ELCR = Excess lifetime cancer risk
EPC = Exposure point concentration
RME = Reasonable maximum exposure

Exposure Variables:

CF	conversion factor	1.00E-06	kg/mg
EF	exposure frequency	13	days/yr
ED_{0-2}	exposure duration	2	yrs
ED_{2-6}	exposure duration	4	yrs
IR	sediment ingestion rate	100	mg/day
ATc	averaging time	25550	days
BW_{0-2}	body weight	9.625	kg
BW_{2-6}	body weight	15	kg
SA	surface area	2440	cm^2/day
AF	adherence factor	0.04	mg/cm^2
ABS	absorption fraction	0.13	unitless
FI	fraction ingested	0.5	unitless

Table F-15
Risk Calculations for Exposure to Carcinogenic PAHs
DePue Lake and Floodplains, Operable Unit 5
Human Health Risk Assessment

Scenario: RME
Scenario Timeframe: Current/Future
Exposure Area: Lake-Wide Sediment
Exposure Medium: Surface Sediment
Receptor: Boat Angler, Adult [a]

Constituent	EPC (mg/kg)	CSF $(mg/kg/d)^{-1}$	ADAF 7 - 16 yrs	ADAF 16 - 30 yrs	CANCER RISK 7 - 16 years ELCRo	7 - 16 years ELCRd	16 - 30 years ELCRo	16 - 30 years ELCRd	Total Risk ELCRo	Total Risk ELCRd	Total ELCR
Benzo(a)anthracene	1.9E-01	0.73	3	1	8.2E-09	1.2E-08	2.9E-09	4.3E-09	1.1E-08	1.6E-08	2.8E-08
Benzo(a)pyrene	1.6E+00	7.3	3	1	7.1E-07	1.0E-06	2.5E-07	3.7E-07	9.6E-07	1.4E-06	2.4E-06
Benzo(b)fluoranthene	2.4E-01	0.73	3	1	1.0E-08	1.5E-08	3.7E-09	5.5E-09	1.4E-08	2.1E-08	3.5E-08
Benzo(k)fluoranthene	1.5E+00	0.073	3	1	6.3E-09	9.4E-09	2.3E-09	3.4E-09	8.6E-09	1.3E-08	2.1E-08
Chrysene	1.7E+00	0.0073	3	1	7.4E-10	1.1E-09	2.6E-10	3.9E-10	1.0E-09	1.5E-09	2.5E-09
Dibenz(a,h)anthracene	2.7E-01	7.3	3	1	1.2E-07	1.7E-07	4.2E-08	6.2E-08	1.6E-07	2.3E-07	3.9E-07
Indeno(1,2,3-cd)pyrene	8.6E-01	0.73	3	1	3.7E-08	5.5E-08	1.3E-08	2.0E-08	5.0E-08	7.4E-08	1.2E-07

Notes:

Cancer risk was calculated using the following equation for ingestion for each portion of life (7 - 16 years, and 16 - 30 years).
$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * IR * FI) / (ATc * BW)$

Cancer risk was calculated using the following equation for dermal for each portion of life (7 - 16 years, and 16 - 30 years).
$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * SA * AF * ABS * FI) / (ATc * BW)$

[a] Represents individual age 7 to 30 years old.

ADAF = Age dependent adjustment factor
CSF = Cancer slope factor
ELCR = Excess lifetime cancer risk
EPC = Exposure point concentration
RME = Reasonable maximum exposure

Exposure Variables:

CF	conversion factor	1.00E-06	kg/mg
EF	exposure frequency	50	days/yr
ED_{7-16}	exposure duration	9	yrs
ED_{16-30}	exposure duration	15	yrs
IR	sediment ingestion rate	100	mg/day
ATc	averaging time	25550	days
BW_{7-16}	body weight	45	kg
BW_{16-30}	body weight	70	kg
BW	body weight	70	kg
SA	surface area	5700	cm^2/day
AF	adherence factor	0.2	mg/cm^2
ABS	absorption fraction	0.13	unitless
FI	fraction ingested	0.5	unitless

Table F-16
Risk Calculations for Exposure to Carcinogenic PAHs
DePue Lake and Floodplains, Operable Unit 5
Human Health Risk Assessment

Scenario: CTE
Scenario Timeframe: Current/Future
Exposure Area: Lake-Wide Sediment
Exposure Medium: Surface Sediment
Receptor: Boat Angler, Adult [a]

Constituent	EPC (mg/kg)	CSF $(mg/kg/d)^{-1}$	ADAF 7 - 16 yrs	ADAF 16 - 30 yrs	CANCER RISK 7 - 16 years ELCRo	7 - 16 years ELCRd	16 - 30 years ELCRo	16 - 30 years ELCRd	Total Risk ELCRo	Total Risk ELCRd	Total ELCR
Benzo(a)anthracene	1.9E-01	0.73	3	1	1.1E-09	6.5E-10	1.2E-10	6.9E-11	1.2E-09	7.2E-10	1.9E-09
Benzo(a)pyrene	1.6E+00	7.3	3	1	9.4E-08	5.6E-08	1.0E-08	6.0E-09	1.0E-07	6.2E-08	1.7E-07
Benzo(b)fluoranthene	2.4E-01	0.73	3	1	1.4E-09	8.2E-10	1.5E-10	8.8E-11	1.5E-09	9.1E-10	2.5E-09
Benzo(k)fluoranthene	1.5E+00	0.073	3	1	8.4E-10	5.0E-10	9.0E-11	5.4E-11	9.4E-10	5.5E-10	1.5E-09
Chrysene	1.7E+00	0.0073	3	1	9.9E-11	5.9E-11	1.1E-11	6.3E-12	1.1E-10	6.5E-11	1.7E-10
Dibenz(a,h)anthracene	2.7E-01	7.3	3	1	1.6E-08	9.2E-09	1.7E-09	9.9E-10	1.7E-08	1.0E-08	2.7E-08
Indeno(1,2,3-cd)pyrene	8.6E-01	0.73	3	1	4.9E-09	2.9E-09	5.3E-10	3.1E-10	5.5E-09	3.2E-09	8.7E-09

Notes:

Cancer risk was calculated using the following equation for ingestion for each portion of life (7 - 16 years, and 16 - 30 years).
$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * IR * FI) / (ATc * BW)$

Cancer risk was calculated using the following equation for dermal for each portion of life (7 - 16 years, and 16 - 30 years).
$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * SA * AF * ABS * FI) / (ATc * BW)$

[a] Represents individual age 7 to 30 years old.

ADAF = Age dependent adjustment factor
CSF = Cancer slope factor
ELCR = Excess lifetime cancer risk
EPC = Exposure point concentration
RME = Reasonable maximum exposure

Exposure Variables:

CF	conversion factor	1.00E-06	kg/mg
EF	exposure frequency	20	days/yr
ED_{7-16}	exposure duration	6	yrs
ED_{16-30}	exposure duration	3	yrs
IR	sediment ingestion rate	50	mg/day
ATc	averaging time	25550	days
BW_{7-16}	body weight	45	kg
BW_{16-30}	body weight	70	kg
BW	body weight	70	kg
SA	surface area	5700	cm^2/day
AF	adherence factor	0.04	mg/cm^2
ABS	absorption fraction	0.13	unitless
FI	fraction ingested	0.5	unitless

Table F-17
Risk Calculations for Exposure to Carcinogenic PAHs
DePue Lake and Floodplains, Operable Unit 5
Human Health Risk Assessment

Scenario: RME
Scenario Timeframe: Current/Future
Exposure Area: Lake-Wide Sediment
Exposure Medium: Surface Sediment
Receptor: Boat Angler, Child [a]

Constituent	EPC (mg/kg)	CSF $(mg/kg/d)^{-1}$	ADAF 0 - 2 yrs	ADAF 2 - 6 yrs	CANCER RISK 0 - 2 years ELCRo	0 - 2 years ELCRd	2 - 6 years ELCRo	2 - 6 years ELCRd	Total Risk ELCRo	Total Risk ELCRd	Total ELCR
Benzo(a)anthracene	1.9E-01	0.73	10	3	5.7E-08	1.8E-08	2.2E-08	6.9E-09	7.9E-08	2.5E-08	1.0E-07
Benzo(a)pyrene	1.6E+00	7.3	10	3	4.9E-06	1.5E-06	1.9E-06	6.0E-07	6.8E-06	2.1E-06	8.9E-06
Benzo(b)fluoranthene	2.4E-01	0.73	10	3	7.2E-08	2.3E-08	2.8E-08	8.8E-09	1.0E-07	3.2E-08	1.3E-07
Benzo(k)fluoranthene	1.5E+00	0.073	10	3	4.4E-08	1.4E-08	1.7E-08	5.4E-09	6.1E-08	1.9E-08	8.0E-08
Chrysene	1.7E+00	0.0073	10	3	5.1E-09	1.6E-09	2.0E-09	6.3E-10	7.1E-09	2.3E-09	9.4E-09
Dibenz(a,h)anthracene	2.7E-01	7.3	10	3	8.1E-07	2.6E-07	3.1E-07	9.9E-08	1.1E-06	3.6E-07	1.5E-06
Indeno(1,2,3-cd)pyrene	8.6E-01	0.73	10	3	2.6E-07	8.1E-08	9.9E-08	3.1E-08	3.5E-07	1.1E-07	4.7E-07

Notes:

Cancer risk was calculated using the following equation for ingestion for each portion of life (0 - 2 years, and 2 - 6 years).
$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * IR * FI) / (ATc * BW)$

Cancer risk was calculated using the following equation for dermal for each portion of life (0 - 2 years, and 2 - 6 years).
$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * SA * AF * ABS * FI) / (ATc * BW)$

[a] Represents individual age 0 to 6 years old.

ADAF = Age dependent adjustment factor
CSF = Cancer slope factor
ELCR = Excess lifetime cancer risk
EPC = Exposure point concentration
RME = Reasonable maximum exposure

Exposure Variables:

CF	conversion factor	1.00E-06	kg/mg
EF	exposure frequency	50	days/yr
ED_{0-2}	exposure duration	2	yrs
ED_{2-6}	exposure duration	4	yrs
IR	sediment ingestion rate	200	mg/day
ATc	averaging time	25550	days
BW_{0-2}	body weight	9.625	kg
BW_{2-6}	body weight	15	kg
SA	surface area	2440	cm^2/day
AF	adherence factor	0.2	mg/cm^2
ABS	absorption fraction	0.13	unitless
FI	fraction ingested	0.5	unitless

Table F-18
Risk Calculations for Exposure to Carcinogenic PAHs
DePue Lake and Floodplains, Operable Unit 5
Human Health Risk Assessment

Scenario: CTE
Scenario Timeframe: Current/Future
Exposure Area: Lake-Wide Sediment
Exposure Medium: Surface Sediment
Receptor: Boat Angler, Child [a]

Constituent	EPC (mg/kg)	CSF $(mg/kg/d)^{-1}$	ADAF 0 - 2 yrs	ADAF 2 - 6 yrs	CANCER RISK 0 - 2 years ELCRo	0 - 2 years ELCRd	2 - 6 years ELCRo	2 - 6 years ELCRd	Total Risk ELCRo	Total Risk ELCRd	Total ELCR
Benzo(a)anthracene	1.9E-01	0.73	10	3	1.1E-08	1.4E-09	4.4E-09	5.6E-10	1.6E-08	2.0E-09	1.8E-08
Benzo(a)pyrene	1.6E+00	7.3	10	3	9.8E-07	1.2E-07	3.8E-07	4.8E-08	1.4E-06	1.7E-07	1.5E-06
Benzo(b)fluoranthene	2.4E-01	0.73	10	3	1.4E-08	1.8E-09	5.6E-09	7.1E-10	2.0E-08	2.5E-09	2.3E-08
Benzo(k)fluoranthene	1.5E+00	0.073	10	3	8.8E-09	1.1E-09	3.4E-09	4.3E-10	1.2E-08	1.5E-09	1.4E-08
Chrysene	1.7E+00	0.0073	10	3	1.0E-09	1.3E-10	4.0E-10	5.0E-11	1.4E-09	1.8E-10	1.6E-09
Dibenz(a,h)anthracene	2.7E-01	7.3	10	3	1.6E-07	2.1E-08	6.2E-08	7.9E-09	2.2E-07	2.8E-08	2.5E-07
Indeno(1,2,3-cd)pyrene	8.6E-01	0.73	10	3	5.1E-08	6.5E-09	2.0E-08	2.5E-09	7.1E-08	9.0E-09	8.0E-08

Notes:

Cancer risk was calculated using the following equation for ingestion for each portion of life (0 - 2 years, and 2 - 6 years).
$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * IR * FI) / (ATc * BW)$

Cancer risk was calculated using the following equation for dermal for each portion of life (0 - 2 years, and 2 - 6 years).
$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * SA * AF * ABS * FI) / (ATc * BW)$

[a] Represents individual age 0 to 6 years old.

ADAF = Age dependent adjustment factor
CSF = Cancer slope factor
ELCR = Excess lifetime cancer risk
EPC = Exposure point concentration
RME = Reasonable maximum exposure

Exposure Variables:

CF	conversion factor	1.00E-06	kg/mg
EF	exposure frequency	20	days/yr
ED_{0-2}	exposure duration	2	yrs
ED_{2-6}	exposure duration	4	yrs
IR	sediment ingestion rate	100	mg/day
ATc	averaging time	25550	days
BW_{0-2}	body weight	9.625	kg
BW_{2-6}	body weight	15	kg
SA	surface area	2440	cm^2/day
AF	adherence factor	0.04	mg/cm^2
ABS	absorption fraction	0.13	unitless
FI	fraction ingested	0.5	unitless

Table F-19
Risk Calculations for Exposure to Carcinogenic PAHs
DePue Lake and Floodplains, Operable Unit 5
Human Health Risk Assessment

Scenario: RME
Scenario Timeframe: Current/Future
Exposure Area: Sediment Area 1A
Exposure Medium: Surface Sediment
Receptor: Shoreline Angler, Adult [a]

Constituent	EPC (mg/kg)	CSF $(mg/kg/d)^{-1}$	ADAF 7 - 16 yrs	ADAF 16 - 30 yrs	CANCER RISK 7 - 16 years ELCRo	7 - 16 years ELCRd	16 - 30 years ELCRo	16 - 30 years ELCRd	Total Risk ELCRo	Total Risk ELCRd	Total ELCR
Benzo(a)anthracene	4.0E+00	0.73	3	1	6.9E-08	1.0E-07	2.4E-08	3.6E-08	9.3E-08	1.4E-07	2.3E-07
Benzo(a)pyrene	3.4E+00	7.3	3	1	5.8E-07	8.6E-07	2.1E-07	3.1E-07	7.9E-07	1.2E-06	2.0E-06
Benzo(b)fluoranthene	2.8E+00	0.73	3	1	4.8E-08	7.1E-08	1.7E-08	2.5E-08	6.5E-08	9.7E-08	1.6E-07
Benzo(k)fluoranthene	3.0E+00	0.073	3	1	5.1E-09	7.6E-09	1.8E-09	2.7E-09	7.0E-09	1.0E-08	1.7E-08
Chrysene	3.5E+00	0.0073	3	1	6.0E-10	8.9E-10	2.1E-10	3.2E-10	8.1E-10	1.2E-09	2.0E-09
Dibenz(a,h)anthracene	5.5E-01	7.3	3	1	9.4E-08	1.4E-07	3.4E-08	5.0E-08	1.3E-07	1.9E-07	3.2E-07
Indeno(1,2,3-cd)pyrene	1.7E+00	0.73	3	1	2.9E-08	4.3E-08	1.0E-08	1.5E-08	4.0E-08	5.9E-08	9.8E-08

Notes:

Cancer risk was calculated using the following equation for ingestion for each portion of life (7 - 16 years, and 16 - 30 years).
$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * IR * FI) / (ATc * BW)$
Cancer risk was calculated using the following equation for dermal for each portion of life (7 - 16 years, and 16 - 30 years).
$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * SA * AF * ABS * FI) / (ATc * BW)$
[a] Represents individual age 7 to 30 years old.

ADAF = Age dependent adjustment factor
CSF = Cancer slope factor
ELCR = Excess lifetime cancer risk
EPC = Exposure point concentration
RME = Reasonable maximum exposure

Exposure Variables:

CF	conversion factor	1.00E-06	kg/mg
EF	exposure frequency	50	days/yr
ED_{7-16}	exposure duration	9	yrs
ED_{16-30}	exposure duration	15	yrs
IR	sediment ingestion rate	100	mg/day
ATc	averaging time	25550	days
BW_{7-16}	body weight	45	kg
BW_{16-30}	body weight	70	kg
SA	surface area	5700	cm^2/day
AF	adherence factor	0.2	mg/cm^2
ABS	absorption fraction	0.13	unitless
FI	fraction ingested	0.2	unitless

Table F-20
Risk Calculations for Exposure to Carcinogenic PAHs
DePue Lake and Floodplains, Operable Unit 5
Human Health Risk Assessment

Scenario: CTE
Scenario Timeframe: Current/Future
Exposure Area: Sediment Area 1A
Exposure Medium: Surface Sediment
Receptor: Shoreline Angler, Adult [a]

Constituent	EPC (mg/kg)	CSF $(mg/kg/d)^{-1}$	ADAF 7 - 16 yrs	ADAF 16 - 30 yrs	CANCER RISK 7 - 16 years ELCRo	7 - 16 years ELCRd	16 - 30 years ELCRo	16 - 30 years ELCRd	Total Risk ELCRo	Total Risk ELCRd	Total ELCR
Benzo(a)anthracene	4.0E+00	0.73	3	1	9.1E-09	5.4E-09	9.8E-10	5.8E-10	1.0E-08	6.0E-09	1.6E-08
Benzo(a)pyrene	3.4E+00	7.3	3	1	7.8E-08	4.6E-08	8.3E-09	4.9E-09	8.6E-08	5.1E-08	1.4E-07
Benzo(b)fluoranthene	2.8E+00	0.73	3	1	6.4E-09	3.8E-09	6.9E-10	4.1E-10	7.1E-09	4.2E-09	1.1E-08
Benzo(k)fluoranthene	3.0E+00	0.073	3	1	6.9E-10	4.1E-10	7.3E-11	4.4E-11	7.6E-10	4.5E-10	1.2E-09
Chrysene	3.5E+00	0.0073	3	1	8.0E-11	4.7E-11	8.6E-12	5.1E-12	8.9E-11	5.3E-11	1.4E-10
Dibenz(a,h)anthracene	5.5E-01	7.3	3	1	1.3E-08	7.5E-09	1.3E-09	8.0E-10	1.4E-08	8.3E-09	2.2E-08
Indeno(1,2,3-cd)pyrene	1.7E+00	0.73	3	1	3.9E-09	2.3E-09	4.2E-10	2.5E-10	4.3E-09	2.6E-09	6.9E-09

Notes:

Cancer risk was calculated using the following equation for ingestion for each portion of life (7 - 16 years, and 16 - 30 years).
$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * IR * FI) / (ATc * BW)$
Cancer risk was calculated using the following equation for dermal for each portion of life (7 - 16 years, and 16 - 30 years).
$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * SA * AF * ABS * FI) / (ATc * BW)$
[a] Represents individual age 7 to 30 years old.

ADAF = Age dependent adjustment factor
CSF = Cancer slope factor
ELCR = Excess lifetime cancer risk
EPC = Exposure point concentration
RME = Reasonable maximum exposure

Exposure Variables:

CF	conversion factor	1.00E-06	kg/mg
EF	exposure frequency	20	days/yr
ED_{7-16}	exposure duration	6	yrs
ED_{16-30}	exposure duration	3	yrs
IR	sediment ingestion rate	50	mg/day
ATc	averaging time	25550	days
BW_{7-16}	body weight	45	kg
BW_{16-30}	body weight	70	kg
SA	surface area	5700	cm^2/day
AF	adherence factor	0.04	mg/cm^2
ABS	absorption fraction	0.13	unitless
FI	fraction ingested	0.2	unitless

Table F-21
Risk Calculations for Exposure to Carcinogenic PAHs
DePue Lake and Floodplains, Operable Unit 5
Human Health Risk Assessment

Scenario: RME
Scenario Timeframe: Current/Future
Exposure Area: Sediment Area 1A
Exposure Medium: Surface Sediment
Receptor: Shoreline Angler, Child [a]

Constituent	EPC (mg/kg)	CSF $(mg/kg/d)^{-1}$	ADAF 0 - 2 yrs	ADAF 2 - 6 yrs	CANCER RISK 0 - 2 years ELCRo	0 - 2 years ELCRd	2 - 6 years ELCRo	2 - 6 years ELCRd	Total Risk ELCRo	Total Risk ELCRd	Total ELCR
Benzo(a)anthracene	4.0E+00	0.73	10	3	4.7E-07	1.5E-07	1.8E-07	5.8E-08	6.6E-07	2.1E-07	8.7E-07
Benzo(a)pyrene	3.4E+00	7.3	10	3	4.0E-06	1.3E-06	1.6E-06	4.9E-07	5.6E-06	1.8E-06	7.4E-06
Benzo(b)fluoranthene	2.8E+00	0.73	10	3	3.3E-07	1.1E-07	1.3E-07	4.1E-08	4.6E-07	1.5E-07	6.1E-07
Benzo(k)fluoranthene	3.0E+00	0.073	10	3	3.6E-08	1.1E-08	1.4E-08	4.4E-09	4.9E-08	1.6E-08	6.5E-08
Chrysene	3.5E+00	0.0073	10	3	4.2E-09	1.3E-09	1.6E-09	5.1E-10	5.8E-09	1.8E-09	7.6E-09
Dibenz(a,h)anthracene	5.5E-01	7.3	10	3	6.5E-07	2.1E-07	2.5E-07	8.0E-08	9.0E-07	2.9E-07	1.2E-06
Indeno(1,2,3-cd)pyrene	1.7E+00	0.73	10	3	2.0E-07	6.4E-08	7.8E-08	2.5E-08	2.8E-07	8.9E-08	3.7E-07

Notes:

Cancer risk was calculated using the following equation for ingestion for each portion of life (0 - 2 years, and 2 - 6 years).
$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * IR * FI) / (ATc * BW)$

Cancer risk was calculated using the following equation for dermal for each portion of life (0 - 2 years, and 2 - 6 years).
$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * SA * AF * ABS * FI) / (ATc * BW)$

[a] Represents individual age 0 to 6 years old.

ADAF = Age dependent adjustment factor
CSF = Cancer slope factor
ELCR = Excess lifetime cancer risk
EPC = Exposure point concentration
RME = Reasonable maximum exposure

Exposure Variables:

CF	conversion factor	1.00E-06	kg/mg
EF	exposure frequency	50	days/yr
ED_{0-2}	exposure duration	2	yrs
ED_{2-6}	exposure duration	4	yrs
IR	sediment ingestion rate	200	mg/day
ATc	averaging time	25550	days
BW_{0-2}	body weight	9.625	kg
BW_{2-6}	body weight	15	kg
SA	surface area	2440	cm^2/day
AF	adherence factor	0.2	mg/cm^2
ABS	absorption fraction	0.13	unitless
FI	fraction ingested	0.2	unitless

Table F-22
Risk Calculations for Exposure to Carcinogenic PAHs
DePue Lake and Floodplains, Operable Unit 5
Human Health Risk Assessment

Scenario: CTE
Scenario Timeframe: Current/Future
Exposure Area: Sediment Area 1A
Exposure Medium: Surface Sediment
Receptor: Shoreline Angler, Child [a]

Constituent	EPC (mg/kg)	CSF $(mg/kg/d)^{-1}$	ADAF 0 - 2 yrs	ADAF 2 - 6 yrs	CANCER RISK 0 - 2 years ELCRo	0 - 2 years ELCRd	2 - 6 years ELCRo	2 - 6 years ELCRd	Total Risk ELCRo	Total Risk ELCRd	Total ELCR
Benzo(a)anthracene	4.0E+00	0.73	10	3	9.5E-08	1.2E-08	3.7E-08	4.6E-09	1.3E-07	1.7E-08	1.5E-07
Benzo(a)pyrene	3.4E+00	7.3	10	3	8.1E-07	1.0E-07	3.1E-07	3.9E-08	1.1E-06	1.4E-07	1.3E-06
Benzo(b)fluoranthene	2.8E+00	0.73	10	3	6.6E-08	8.4E-09	2.6E-08	3.2E-09	9.2E-08	1.2E-08	1.0E-07
Benzo(k)fluoranthene	3.0E+00	0.073	10	3	7.1E-09	9.0E-10	2.7E-09	3.5E-10	9.9E-09	1.3E-09	1.1E-08
Chrysene	3.5E+00	0.0073	10	3	8.3E-10	1.1E-10	3.2E-10	4.1E-11	1.2E-09	1.5E-10	1.3E-09
Dibenz(a,h)anthracene	5.5E-01	7.3	10	3	1.3E-07	1.7E-08	5.0E-08	6.4E-09	1.8E-07	2.3E-08	2.0E-07
Indeno(1,2,3-cd)pyrene	1.7E+00	0.73	10	3	4.0E-08	5.1E-09	1.6E-08	2.0E-09	5.6E-08	7.1E-09	6.3E-08

Notes:

Cancer risk was calculated using the following equation for ingestion for each portion of life (0 - 2 years, and 2 - 6 years).
$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * IR * FI) / (ATc * BW)$

Cancer risk was calculated using the following equation for dermal for each portion of life (0 - 2 years, and 2 - 6 years).
$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * SA * AF * ABS * FI) / (ATc * BW)$

[a] Represents individual age 0 to 6 years old.

ADAF = Age dependent adjustment factor
CSF = Cancer slope factor
ELCR = Excess lifetime cancer risk
EPC = Exposure point concentration
RME = Reasonable maximum exposure

Exposure Variables:

CF	conversion factor	1.00E-06	kg/mg
EF	exposure frequency	20	days/yr
ED_{0-2}	exposure duration	2	yrs
ED_{2-6}	exposure duration	4	yrs
IR	sediment ingestion rate	100	mg/day
ATc	averaging time	25550	days
BW_{0-2}	body weight	9.625	kg
BW_{2-6}	body weight	15	kg
SA	surface area	2440	cm^2/day
AF	adherence factor	0.04	mg/cm^2
ABS	absorption fraction	0.13	unitless
FI	fraction ingested	0.2	unitless

Table F-23
Risk Calculations for Exposure to Carcinogenic PAHs
DePue Lake and Floodplains, Operable Unit 5
Human Health Risk Assessment

Scenario: RME
Scenario Timeframe: Current/Future
Exposure Area: Lake-Wide
Exposure Medium: Surface Sediment, Swimming
Receptor: Recreational User, Adult [a]

Constituent	EPC (mg/kg)	CSF $(mg/kg/d)^{-1}$	ADAF 7 - 16 yrs	ADAF 16 - 30 yrs	CANCER RISK 7 - 16 years ELCRo	7 - 16 years ELCRd	16 - 30 years ELCRo	16 - 30 years ELCRd	Total Risk ELCRo	Total Risk ELCRd	Total ELCR
Benzo(a)anthracene	1.9E-01	0.73	3	1	1.8E-08	8.5E-08	6.5E-09	3.0E-08	2.5E-08	1.2E-07	1.4E-07
Benzo(a)pyrene	1.6E+00	7.3	3	1	1.6E-06	7.4E-06	5.6E-07	2.6E-06	2.1E-06	1.0E-05	1.2E-05
Benzo(b)fluoranthene	2.4E-01	0.73	3	1	2.3E-08	1.1E-07	8.3E-09	3.9E-08	3.2E-08	1.5E-07	1.8E-07
Benzo(k)fluoranthene	1.5E+00	0.073	3	1	1.4E-08	6.6E-08	5.1E-09	2.4E-08	1.9E-08	9.0E-08	1.1E-07
Chrysene	1.7E+00	0.0073	3	1	1.7E-09	7.8E-09	5.9E-10	2.8E-09	2.3E-09	1.1E-08	1.3E-08
Dibenz(a,h)anthracene	2.7E-01	7.3	3	1	2.6E-07	1.2E-06	9.3E-08	4.4E-07	3.6E-07	1.7E-06	2.0E-06
Indeno(1,2,3-cd)pyrene	8.6E-01	0.73	3	1	8.3E-08	3.9E-07	3.0E-08	1.4E-07	1.1E-07	5.3E-07	6.4E-07

Notes:

Cancer risk was calculated using the following equation for ingestion for each portion of life (7 - 16 years, and 16 - 30 years).
$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * IR * FI) / (ATc * BW)$
Cancer risk was calculated using the following equation for dermal for each portion of life (7 - 16 years, and 16 - 30 years).
$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * SA * AF * ABS * FI) / (ATc * BW)$
[a] Represents individual age 7 to 30 years old.
ADAF = Age dependent adjustment factor
CSF = Cancer slope factor
ELCR = Excess lifetime cancer risk
EPC = Exposure point concentration
RME = Reasonable maximum exposure

Exposure Variables:

CF	conversion factor	1.00E-06	kg/mg
EF	exposure frequency	56	days/yr
ED_{7-16}	exposure duration	9	yrs
ED_{16-30}	exposure duration	15	yrs
IR	sediment ingestion rate	100	mg/day
ATc	averaging time	25550	days
BW_{7-16}	body weight	45	kg
BW_{16-30}	body weight	70	kg
SA	surface area	18000	cm^2/day
AF	adherence factor	0.2	mg/cm^2
ABS	absorption fraction	0.13	unitless
FI	fraction ingested	1	unitless

Table F-24
Risk Calculations for Exposure to Carcinogenic PAHs
DePue Lake and Floodplains, Operable Unit 5
Human Health Risk Assessment

Scenario: CTE
Scenario Timeframe: Current/Future
Exposure Area: Lake-Wide
Exposure Medium: Surface Sediment, Swimming
Receptor: Recreational User, Adult [a]

Constituent	EPC (mg/kg)	CSF $(mg/kg/d)^{-1}$	ADAF 7 - 16 yrs	ADAF 16 - 30 yrs	CANCER RISK 7 - 16 years ELCRo	7 - 16 years ELCRd	16 - 30 years ELCRo	16 - 30 years ELCRd	Total Risk ELCRo	Total Risk ELCRd	Total ELCR
Benzo(a)anthracene	1.9E-01	0.73	3	1	3.0E-09	5.7E-09	3.3E-10	6.1E-10	3.4E-09	6.3E-09	9.7E-09
Benzo(a)pyrene	1.6E+00	7.3	3	1	2.6E-07	4.9E-07	2.8E-08	5.3E-08	2.9E-07	5.5E-07	8.4E-07
Benzo(b)fluoranthene	2.4E-01	0.73	3	1	3.9E-09	7.3E-09	4.2E-10	7.8E-10	4.3E-09	8.1E-09	1.2E-08
Benzo(k)fluoranthene	1.5E+00	0.073	3	1	2.4E-09	4.4E-09	2.5E-10	4.7E-10	2.6E-09	4.9E-09	7.5E-09
Chrysene	1.7E+00	0.0073	3	1	2.8E-10	5.2E-10	3.0E-11	5.5E-11	3.1E-10	5.7E-10	8.8E-10
Dibenz(a,h)anthracene	2.7E-01	7.3	3	1	4.4E-08	8.2E-08	4.7E-09	8.7E-09	4.8E-08	9.0E-08	1.4E-07
Indeno(1,2,3-cd)pyrene	8.6E-01	0.73	3	1	1.4E-08	2.6E-08	1.5E-09	2.8E-09	1.5E-08	2.9E-08	4.4E-08

Notes:

Cancer risk was calculated using the following equation for ingestion for each portion of life (7 - 16 years, and 16 - 30 years).
$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * IR * FI) / (ATc * BW)$
Cancer risk was calculated using the following equation for dermal for each portion of life (7 - 16 years, and 16 - 30 years).
$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * SA * AF * ABS * FI) / (ATc * BW)$
[a] Represents individual age 7 to 30 years old.
ADAF = Age dependent adjustment factor
CSF = Cancer slope factor
ELCR = Excess lifetime cancer risk
EPC = Exposure point concentration
RME = Reasonable maximum exposure

Exposure Variables:

CF	conversion factor	1.00E-06	kg/mg
EF	exposure frequency	28	days/yr
ED_{7-16}	exposure duration	6	yrs
ED_{16-30}	exposure duration	3	yrs
IR	sediment ingestion rate	50	mg/day
ATc	averaging time	25550	days
BW_{7-16}	body weight	45	kg
BW_{16-30}	body weight	70	kg
SA	surface area	18000	cm^2/day
AF	adherence factor	0.04	mg/cm^2
ABS	absorption fraction	0.13	unitless
FI	fraction ingested	1	unitless

Table F-25
Risk Calculations for Exposure to Carcinogenic PAHs
DePue Lake and Floodplains, Operable Unit 5
Human Health Risk Assessment

Scenario: RME
Scenario Timeframe: Current/Future
Exposure Area: Lake-Wide
Exposure Medium: Surface Sediment, Swimming
Receptor: Recreational User, Child [a]

Constituent	EPC (mg/kg)	CSF $(mg/kg/d)^{-1}$	ADAF 0 - 2 yrs	ADAF 2 - 6 yrs	CANCER RISK 0 - 2 years ELCRo	0 - 2 years ELCRd	2 - 6 years ELCRo	2 - 6 years ELCRd	Total Risk ELCRo	Total Risk ELCRd	Total ELCR
Benzo(a)anthracene	1.9E-01	0.73	10	3	1.3E-07	1.1E-07	4.9E-08	4.2E-08	1.7E-07	1.5E-07	3.3E-07
Benzo(a)pyrene	1.6E+00	7.3	10	3	1.1E-05	9.4E-06	4.2E-06	3.6E-06	1.5E-05	1.3E-05	2.8E-05
Benzo(b)fluoranthene	2.4E-01	0.73	10	3	1.6E-07	1.4E-07	6.2E-08	5.3E-08	2.2E-07	1.9E-07	4.2E-07
Benzo(k)fluoranthene	1.5E+00	0.073	10	3	9.8E-08	8.4E-08	3.8E-08	3.2E-08	1.4E-07	1.2E-07	2.5E-07
Chrysene	1.7E+00	0.0073	10	3	1.1E-08	9.9E-09	4.4E-09	3.8E-09	1.6E-08	1.4E-08	3.0E-08
Dibenz(a,h)anthracene	2.7E-01	7.3	10	3	1.8E-06	1.6E-06	7.0E-07	6.0E-07	2.5E-06	2.2E-06	4.7E-06
Indeno(1,2,3-cd)pyrene	8.6E-01	0.73	10	3	5.7E-07	4.9E-07	2.2E-07	1.9E-07	7.9E-07	6.8E-07	1.5E-06

Notes:

Cancer risk was calculated using the following equation for ingestion for each portion of life (0 - 2 years, and 2 - 6 years).

$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * IR * FI) / (ATc * BW)$

Cancer risk was calculated using the following equation for dermal for each portion of life (0 - 2 years, and 2 - 6 years).

$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * SA * AF * ABS * FI) / (ATc * BW)$

[a] Represents individual age 0 to 6 years old.

ADAF = Age dependent adjustment factor
CSF = Cancer slope factor
ELCR = Excess lifetime cancer risk
EPC = Exposure point concentration
RME = Reasonable maximum exposure

Exposure Variables:

CF	conversion factor	1.00E-06	kg/mg
EF	exposure frequency	56	days/yr
ED_{0-2}	exposure duration	2	yrs
ED_{2-6}	exposure duration	4	yrs
IR	sediment ingestion rate	200	mg/day
ATc	averaging time	25550	days
BW_{0-2}	body weight	9.625	kg
BW_{2-6}	body weight	15	kg
SA	surface area	6600	cm^2/day
AF	adherence factor	0.2	mg/cm^2
ABS	absorption fraction	0.13	unitless
FI	fraction ingested	1	unitless

Table F-26
Risk Calculations for Exposure to Carcinogenic PAHs
DePue Lake and Floodplains, Operable Unit 5
Human Health Risk Assessment

Scenario: CTE
Scenario Timeframe: Current/Future
Exposure Area: Lake-Wide
Exposure Medium: Surface Sediment, Swimming
Receptor: Recreational User, Child [a]

Constituent	EPC (mg/kg)	CSF $(mg/kg/d)^{-1}$	ADAF 0 - 2 yrs	ADAF 2 - 6 yrs	CANCER RISK 0 - 2 years ELCRo	0 - 2 years ELCRd	2 - 6 years ELCRo	2 - 6 years ELCRd	Total Risk ELCRo	Total Risk ELCRd	Total ELCR
Benzo(a)anthracene	1.9E-01	0.73	10	3	3.2E-08	1.1E-08	1.2E-08	4.2E-09	4.4E-08	1.5E-08	5.9E-08
Benzo(a)pyrene	1.6E+00	7.3	10	3	2.7E-06	9.4E-07	1.1E-06	3.6E-07	3.8E-06	1.3E-06	5.1E-06
Benzo(b)fluoranthene	2.4E-01	0.73	10	3	4.0E-08	1.4E-08	1.6E-08	5.3E-09	5.6E-08	1.9E-08	7.5E-08
Benzo(k)fluoranthene	1.5E+00	0.073	10	3	2.5E-08	8.4E-09	9.5E-09	3.2E-09	3.4E-08	1.2E-08	4.6E-08
Chrysene	1.7E+00	0.0073	10	3	2.9E-09	9.9E-10	1.1E-09	3.8E-10	4.0E-09	1.4E-09	5.3E-09
Dibenz(a,h)anthracene	2.7E-01	7.3	10	3	4.5E-07	1.6E-07	1.7E-07	6.0E-08	6.3E-07	2.2E-07	8.4E-07
Indeno(1,2,3-cd)pyrene	8.6E-01	0.73	10	3	1.4E-07	4.9E-08	5.5E-08	1.9E-08	2.0E-07	6.8E-08	2.7E-07

Notes:

Cancer risk was calculated using the following equation for ingestion for each portion of life (0 - 2 years, and 2 - 6 years).
$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * IR * FI) / (ATc * BW)$
Cancer risk was calculated using the following equation for dermal for each portion of life (0 - 2 years, and 2 - 6 years).
$(EPC * CSF * ADAF_{x-y} * CF * EF * ED_{x-y} * SA * AF * ABS * FI) / (ATc * BW)$
[a] Represents individual age 0 to 6 years old.
ADAF = Age dependent adjustment factor
CSF = Cancer slope factor
ELCR = Excess lifetime cancer risk
EPC = Exposure point concentration
RME = Reasonable maximum exposure

Exposure Variables:

CF	conversion factor	1.00E-06	kg/mg
EF	exposure frequency	28	days/yr
ED_{0-2}	exposure duration	2	yrs
ED_{2-6}	exposure duration	4	yrs
IR	sediment ingestion rate	100	mg/day
ATc	averaging time	25550	days
BW_{0-2}	body weight	9.625	kg
BW_{2-6}	body weight	15	kg
SA	surface area	6600	cm^2/day
AF	adherence factor	0.04	mg/cm^2
ABS	absorption fraction	0.13	unitless
FI	fraction ingested	1	unitless

Table F-27
Summary of Receptor-Specific Mutagenic Cancer Risks
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Receptor, Age	Exposure Area	Exposure Medium	Exposure Route	Chemical	RME Cancer Risks	CTE Cancer Risks
Trespasser, Adolescent	Floodplain Area 1B	Surface Soil	Ingestion	Benzo(a)anthracene	4.E-08	7.E-09
				Benzo(a)pyrene	5.E-07	8.E-08
				Benzo(b)fluoranthene	6.E-08	1.E-08
				Benzo(k)fluoranthene	5.E-09	8.E-10
				Chrysene	7.E-10	1.E-10
				Dibenz(a,h)anthracene	2.E-07	3.E-08
				Indeno(1,2,3-cd)pyrene	3.E-08	6.E-09
				Total	8.E-07	1.E-07
			Dermal	Benzo(a)anthracene	2.E-08	4.E-09
				Benzo(a)pyrene	3.E-07	5.E-08
				Benzo(b)fluoranthene	3.E-08	6.E-09
				Benzo(k)fluoranthene	2.E-09	5.E-10
				Chrysene	3.E-10	7.E-11
				Dibenz(a,h)anthracene	9.E-08	2.E-08
				Indeno(1,2,3-cd)pyrene	2.E-08	3.E-09
				Total	4.E-07	8.E-08
	Floodplain Area 2	Surface Soil	Ingestion	Benzo(a)anthracene	6.E-09	1.E-09
				Benzo(a)pyrene	9.E-08	2.E-08
				Benzo(b)fluoranthene	9.E-09	2.E-09
				Benzo(k)fluoranthene	9.E-10	1.E-10
				Chrysene	9.E-11	2.E-11
				Indeno(1,2,3-cd)pyrene	8.E-09	1.E-09
				Total	1.E-07	2.E-08
			Dermal	Benzo(a)anthracene	3.E-09	7.E-10
				Benzo(a)pyrene	5.E-08	9.E-09
				Benzo(b)fluoranthene	5.E-09	9.E-10
				Benzo(k)fluoranthene	4.E-10	9.E-11
				Chrysene	5.E-11	9.E-12
				Indeno(1,2,3-cd)pyrene	4.E-09	8.E-10
				Total	6.E-08	1.E-08
	Floodplain Area 3	Surface Soil	Ingestion	Benzo(a)anthracene	6.E-09	1.E-09
				Benzo(a)pyrene	7.E-08	1.E-08
				Benzo(b)fluoranthene	1.E-08	2.E-09
				Benzo(k)fluoranthene	4.E-10	7.E-11
				Chrysene	8.E-11	1.E-11
				Dibenz(a,h)anthracene	2.E-08	3.E-09
				Indeno(1,2,3-cd)pyrene	6.E-09	1.E-09
				Total	1.E-07	2.E-08
			Dermal	Benzo(a)anthracene	3.E-09	7.E-10
				Benzo(a)pyrene	4.E-08	8.E-09
				Benzo(b)fluoranthene	7.E-09	1.E-09
				Benzo(k)fluoranthene	2.E-10	4.E-11
				Chrysene	4.E-11	8.E-12
				Dibenz(a,h)anthracene	9.E-09	2.E-09
				Indeno(1,2,3-cd)pyrene	3.E-09	7.E-10
				Total	6.E-08	1.E-08
Recreational User, Adult	Sediment Area 1A	Surface Sediment, Wading	Ingestion	Benzo(a)anthracene	1.E-07	1.E-08
				Benzo(a)pyrene	9.E-07	1.E-07
				Benzo(b)fluoranthene	7.E-08	1.E-08
				Benzo(k)fluoranthene	8.E-09	1.E-09
				Chrysene	9.E-10	1.E-10
				Dibenz(a,h)anthracene	1.E-07	2.E-08
				Indeno(1,2,3-cd)pyrene	4.E-08	6.E-09
				Total	1.E-06	2.E-07
			Dermal	Benzo(a)anthracene	2.E-07	8.E-09
				Benzo(a)pyrene	1.E-06	7.E-08
				Benzo(b)fluoranthene	1.E-07	6.E-09
				Benzo(k)fluoranthene	1.E-08	6.E-10
				Chrysene	1.E-09	7.E-11
				Dibenz(a,h)anthracene	2.E-07	1.E-08
				Indeno(1,2,3-cd)pyrene	7.E-08	4.E-09
				Total	2.E-06	1.E-07

Table F-27
Summary of Receptor-Specific Mutagenic Cancer Risks
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Receptor, Age	Exposure Area	Exposure Medium	Exposure Route	Chemical	RME Cancer Risks	CTE Cancer Risks
Recreational User, Adult	Sediment Area 1A	Surface Sediment, Swimming	Ingestion	Benzo(a)anthracene	1.E-07	1.E-08
				Benzo(a)pyrene	9.E-07	1.E-07
				Benzo(b)fluoranthene	7.E-08	1.E-08
				Benzo(k)fluoranthene	8.E-09	1.E-09
				Chrysene	9.E-10	1.E-10
				Dibenz(a,h)anthracene	1.E-07	2.E-08
				Indeno(1,2,3-cd)pyrene	4.E-08	6.E-09
				Total	1.E-06	2.E-07
			Dermal	Benzo(a)anthracene	5.E-07	3.E-08
				Benzo(a)pyrene	4.E-06	2.E-07
				Benzo(b)fluoranthene	3.E-07	2.E-08
				Benzo(k)fluoranthene	4.E-08	2.E-09
				Chrysene	4.E-09	2.E-10
				Dibenz(a,h)anthracene	7.E-07	4.E-08
				Indeno(1,2,3-cd)pyrene	2.E-07	1.E-08
				Total	6.E-06	3.E-07
Recreational User, Child	Sediment Area 1A	Surface Sediment, Wading	Ingestion	Benzo(a)anthracene	7.E-07	2.E-07
				Benzo(a)pyrene	6.E-06	2.E-06
				Benzo(b)fluoranthene	5.E-07	1.E-07
				Benzo(k)fluoranthene	6.E-08	1.E-08
				Chrysene	6.E-09	2.E-09
				Dibenz(a,h)anthracene	1.E-06	3.E-07
				Indeno(1,2,3-cd)pyrene	3.E-07	8.E-08
				Total	9.E-06	2.E-06
			Dermal	Benzo(a)anthracene	2.E-07	1.E-10
				Benzo(a)pyrene	2.E-06	1.E-09
				Benzo(b)fluoranthene	2.E-07	1.E-10
				Benzo(k)fluoranthene	2.E-08	1.E-11
				Chrysene	2.E-09	1.E-12
				Dibenz(a,h)anthracene	3.E-07	2.E-10
				Indeno(1,2,3-cd)pyrene	1.E-07	6.E-11
				Total	3.E-06	2.E-09
Recreational User, Child	Sediment Area 1A	Surface Sediment, Swimming	Ingestion	Benzo(a)anthracene	7.E-07	2.E-07
				Benzo(a)pyrene	6.E-06	2.E-06
				Benzo(b)fluoranthene	5.E-07	1.E-07
				Benzo(k)fluoranthene	6.E-08	1.E-08
				Chrysene	6.E-09	2.E-09
				Dibenz(a,h)anthracene	1.E-06	3.E-07
				Indeno(1,2,3-cd)pyrene	3.E-07	8.E-08
				Total	9.E-06	2.E-06
			Dermal	Benzo(a)anthracene	6.E-07	6.E-08
				Benzo(a)pyrene	5.E-06	5.E-07
				Benzo(b)fluoranthene	4.E-07	4.E-08
				Benzo(k)fluoranthene	5.E-08	5.E-09
				Chrysene	6.E-09	6.E-10
				Dibenz(a,h)anthracene	9.E-07	9.E-08
				Indeno(1,2,3-cd)pyrene	3.E-07	3.E-08
				Total	8.E-06	8.E-07
Boater, Adult	Lake-wide	Surface Sediment	Ingestion	Benzo(a)anthracene	6.E-09	8.E-10
				Benzo(a)pyrene	5.E-07	7.E-08
				Benzo(b)fluoranthene	7.E-09	1.E-09
				Benzo(k)fluoranthene	4.E-09	6.E-10
				Chrysene	5.E-10	7.E-11
				Dibenz(a,h)anthracene	8.E-08	1.E-08
				Indeno(1,2,3-cd)pyrene	3.E-08	4.E-09
				Total	6.E-07	8.E-08
			Dermal	Benzo(a)anthracene	9.E-09	5.E-10
				Benzo(a)pyrene	7.E-07	4.E-08
				Benzo(b)fluoranthene	1.E-08	6.E-10
				Benzo(k)fluoranthene	7.E-09	4.E-10
				Chrysene	8.E-10	4.E-11
				Dibenz(a,h)anthracene	1.E-07	7.E-09
				Indeno(1,2,3-cd)pyrene	4.E-08	2.E-09
				Total	9.E-07	5.E-08

Table F-27
Summary of Receptor-Specific Mutagenic Cancer Risks
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Receptor, Age	Exposure Area	Exposure Medium	Exposure Route	Chemical	RME Cancer Risks	CTE Cancer Risks
Boater, Child	Lake-wide	Surface Sediment	Ingestion	Benzo(a)anthracene	4.E-08	1.E-08
				Benzo(a)pyrene	4.E-06	9.E-07
				Benzo(b)fluoranthene	5.E-08	1.E-08
				Benzo(k)fluoranthene	3.E-08	8.E-09
				Chrysene	4.E-09	9.E-10
				Dibenz(a,h)anthracene	6.E-07	1.E-07
				Indeno(1,2,3-cd)pyrene	2.E-07	5.E-08
				Total	4.E-06	1.E-06
			Dermal	Benzo(a)anthracene	1.E-08	1.E-09
				Benzo(a)pyrene	1.E-06	8.E-08
				Benzo(b)fluoranthene	2.E-08	1.E-09
				Benzo(k)fluoranthene	1.E-08	7.E-10
				Chrysene	1.E-09	9.E-11
				Dibenz(a,h)anthracene	2.E-07	1.E-08
				Indeno(1,2,3-cd)pyrene	6.E-08	4.E-09
				Total	1.E-06	1.E-07
Boat Angler, Adult	Lake-wide	Surface Sediment	Ingestion	Benzo(a)anthracene	1.E-08	1.E-09
				Benzo(a)pyrene	1.E-06	1.E-07
				Benzo(b)fluoranthene	1.E-08	2.E-09
				Benzo(k)fluoranthene	9.E-09	9.E-10
				Chrysene	1.E-09	1.E-10
				Dibenz(a,h)anthracene	2.E-07	2.E-08
				Indeno(1,2,3-cd)pyrene	5.E-08	5.E-09
				Total	1.E-06	1.E-07
			Dermal	Benzo(a)anthracene	2.E-08	7.E-10
				Benzo(a)pyrene	1.E-06	6.E-08
				Benzo(b)fluoranthene	2.E-08	9.E-10
				Benzo(k)fluoranthene	1.E-08	6.E-10
				Chrysene	1.E-09	6.E-11
				Dibenz(a,h)anthracene	2.E-07	1.E-08
				Indeno(1,2,3-cd)pyrene	7.E-08	3.E-09
				Total	2.E-06	8.E-08
Boat Angler, Child	Lake-wide	Surface Sediment	Ingestion	Benzo(a)anthracene	8.E-08	2.E-08
				Benzo(a)pyrene	7.E-06	1.E-06
				Benzo(b)fluoranthene	1.E-07	2.E-08
				Benzo(k)fluoranthene	6.E-08	1.E-08
				Chrysene	7.E-09	1.E-09
				Dibenz(a,h)anthracene	1.E-06	2.E-07
				Indeno(1,2,3-cd)pyrene	4.E-07	7.E-08
				Total	8.E-06	2.E-06
			Dermal	Benzo(a)anthracene	2.E-08	2.E-09
				Benzo(a)pyrene	2.E-06	2.E-07
				Benzo(b)fluoranthene	3.E-08	3.E-09
				Benzo(k)fluoranthene	2.E-08	2.E-09
				Chrysene	2.E-09	2.E-10
				Dibenz(a,h)anthracene	4.E-07	3.E-08
				Indeno(1,2,3-cd)pyrene	1.E-07	9.E-09
				Total	3.E-06	2.E-07
Shoreline Angler, Adult	Sediment Area 1A	Surface Sediment	Ingestion	Benzo(a)anthracene	9.E-08	1.E-08
				Benzo(a)pyrene	8.E-07	9.E-08
				Benzo(b)fluoranthene	7.E-08	7.E-09
				Benzo(k)fluoranthene	7.E-09	8.E-10
				Chrysene	8.E-10	9.E-11
				Dibenz(a,h)anthracene	1.E-07	1.E-08
				Indeno(1,2,3-cd)pyrene	4.E-08	4.E-09
				Total	1.E-06	1.E-07
			Dermal	Benzo(a)anthracene	1.E-07	6.E-09
				Benzo(a)pyrene	1.E-06	5.E-08
				Benzo(b)fluoranthene	1.E-07	4.E-09
				Benzo(k)fluoranthene	1.E-08	5.E-10
				Chrysene	1.E-09	5.E-11
				Dibenz(a,h)anthracene	2.E-07	8.E-09
				Indeno(1,2,3-cd)pyrene	6.E-08	3.E-09
				Total	2.E-06	7.E-08

Table F-27
Summary of Receptor-Specific Mutagenic Cancer Risks
Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain, DePue, Illinois

Receptor, Age	Exposure Area	Exposure Medium	Exposure Route	Chemical	RME Cancer Risks	CTE Cancer Risks
Shoreline Angler, Child	Sediment Area 1A	Surface Sediment	Ingestion	Benzo(a)anthracene	7.E-07	1.E-07
				Benzo(a)pyrene	6.E-06	1.E-06
				Benzo(b)fluoranthene	5.E-07	9.E-08
				Benzo(k)fluoranthene	5.E-08	1.E-08
				Chrysene	6.E-09	1.E-09
				Dibenz(a,h)anthracene	9.E-07	2.E-07
				Indeno(1,2,3-cd)pyrene	3.E-07	6.E-08
				Total	8.E-06	2.E-06
			Dermal	Benzo(a)anthracene	2.E-07	2.E-08
				Benzo(a)pyrene	2.E-06	1.E-07
				Benzo(b)fluoranthene	1.E-07	1.E-08
				Benzo(k)fluoranthene	2.E-08	1.E-09
				Chrysene	2.E-09	1.E-10
				Dibenz(a,h)anthracene	3.E-07	2.E-08
				Indeno(1,2,3-cd)pyrene	9.E-08	7.E-09
				Total	3.E-06	2.E-07
Lake-Wide Recreational User, Adult	Lake-wide	Surface Sediment, Swimming	Ingestion	Benzo(a)anthracene	2.E-08	3.E-09
				Benzo(a)pyrene	2.E-06	3.E-07
				Benzo(b)fluoranthene	3.E-08	4.E-09
				Benzo(k)fluoranthene	2.E-08	3.E-09
				Chrysene	2.E-09	3.E-10
				Dibenz(a,h)anthracene	4.E-07	5.E-08
				Indeno(1,2,3-cd)pyrene	1.E-07	2.E-08
				Total	3.E-06	4.E-07
			Dermal	Benzo(a)anthracene	1.E-07	6.E-09
				Benzo(a)pyrene	1.E-05	5.E-07
				Benzo(b)fluoranthene	1.E-07	8.E-09
				Benzo(k)fluoranthene	9.E-08	5.E-09
				Chrysene	1.E-08	6.E-10
				Dibenz(a,h)anthracene	2.E-06	9.E-08
				Indeno(1,2,3-cd)pyrene	5.E-07	3.E-08
				Total	1.E-05	7.E-07
Lake-Wide Recreational User, Child	Lake-wide	Surface Sediment, Swimming	Ingestion	Benzo(a)anthracene	2.E-07	4.E-08
				Benzo(a)pyrene	2.E-05	4.E-06
				Benzo(b)fluoranthene	2.E-07	6.E-08
				Benzo(k)fluoranthene	1.E-07	3.E-08
				Chrysene	2.E-08	4.E-09
				Dibenz(a,h)anthracene	3.E-06	6.E-07
				Indeno(1,2,3-cd)pyrene	8.E-07	2.E-07
				Total	2.E-05	5.E-06
			Dermal	Benzo(a)anthracene	2.E-07	2.E-08
				Benzo(a)pyrene	1.E-05	1.E-06
				Benzo(b)fluoranthene	2.E-07	2.E-08
				Benzo(k)fluoranthene	1.E-07	1.E-08
				Chrysene	1.E-08	1.E-09
				Dibenz(a,h)anthracene	2.E-06	2.E-07
				Indeno(1,2,3-cd)pyrene	7.E-07	7.E-08
				Total	2.E-05	2.E-06

Table E-1
Summary of Screening Toxicity Values for Soil and Sediment COPC Screening Process

Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain
DePue, Illinois

			USEPA RSLs [1]	IEPA TACO SROs [2]						IEPA non-TACO SROs [3]					
Constituent	CAS number	Units	Residential Soil	Residential Soil Ingestion	Residental Soil Inhalation	Industrial Soil Ingestion	Industrial Soil Inhalation	Construction Soil Ingestion	Construction Soil Inhalation	Residential Soil Ingestion	Residental Soil Inhalation	Industrial Soil Ingestion	Industrial Soil Inhalation	Construction Soil Ingestion	Construction Soil Inhalation
1,1,1-Trichloroethane	71-55-6	ug/kg	8700000	--	1200000	8200000	1800000	8200000	1800000	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	560	--	--	--	--	--	--	310000	2000000	8200000	2000000	2000000	2000000
1,1,2-Trichloroethane	79-00-5	ug/kg	1100	310000	1800000	8200000	1800000	8200000	1800000	--	--	--	--	--	--
1,1-Dichloroethane	75-34-3	ug/kg	3300	7800000	1300000	200000000	1700000	200000000	130000	--	--	--	--	--	--
1,1-Dichloroethene	75-35-4	ug/kg	240000	3900000	290000	100000000	470000	10000000	3000	--	--	--	--	--	--
1,2,4-Trichlorobenzene	120-82-1	ug/kg	22000	--	--	20000000	3200000	2000000	920000	--	--	--	--	--	--
1,2-Dichlorobenzene	95-50-1	ug/kg	1900000	7000000	560000	180000000	560000	18000000	310000	--	--	--	--	--	--
1,2-Dichloroethane	107-06-2	ug/kg	430	7000	400	63000	700	1400000	990	--	--	--	--	--	--
1,2-Dichloroethene (Total)	540-59-0	ug/kg	700000	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichloropropane	78-87-5	ug/kg	890	9000	15000	84000	23000	1800000	500	--	--	--	--	--	--
1,3-Dichlorobenzene	541-73-1	ug/kg	--	--	--	--	--	--	--	--	--	--	--	--	--
1,3-Dichloropropene (Total)	542-75-6	ug/kg	1700	6400	1100	57000	2100	1200000	390	--	--	--	--	--	--
1,4-Dichlorobenzene	106-46-7	ug/kg	2400	--	11000000	--	17000000	--	340000	--	--	--	--	--	--
1-Methylnaphthalene	90-12-0	ug/kg	22000	--	--	--	--	--	--	--	--	--	--	--	--
2,2'-oxybis(1-Chloropropane	108-60-1	ug/kg	4600	--	--	--	--	--	--	3100000	1300000	82000000	1300000	8200000	1300000
2,4,5-Trichlorophenol	95-95-4	ug/kg	6100000	7800000	--	200000000	--	200000000	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	88-06-2	ug/kg	44000	58000	200000	520000	390000	11000000	540000	--	--	--	--	--	--
2,4-Dichlorophenol	120-83-2	ug/kg	180000	230000	--	6100000	--	610000	--	--	--	--	--	--	--
2,4-Dimethylphenol	105-67-9	ug/kg	1200000	1600000	--	41000000	--	41000000	--	--	--	--	--	--	--
2,4-Dinitrophenol	51-28-5	ug/kg	120000	160000	--	4100000	--	410000	--	--	--	--	--	--	--
2,4-Dinitrotoluene	121-14-2	ug/kg	1600	9000	--	8400	--	180000	--	--	--	--	--	--	--
2,6-Dinitrotoluene	606-20-2	ug/kg	61000	9000	--	8400	--	180000	--	--	--	--	--	--	--
2-Butanone	78-93-3	ug/kg	28000000	--	--	--	--	--	--	--	--	--	--	--	--
2-Chloronaphthalene	91-58-7	ug/kg	6300000	--	--	--	--	--	--	--	--	--	--	--	--
2-Chlorophenol	95-57-8	ug/kg	390000	390000	53000000	10000000	53000000	10000000	53000000	--	--	--	--	--	--
2-Hexanone	591-78-6	ug/kg	210000	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	91-57-6	ug/kg	310000	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylphenol	95-48-7	ug/kg	3100000	390000	--	100000000	--	100000000	--	--	--	--	--	--	--
2-Nitroaniline	88-74-4	ug/kg	610000	--	--	--	--	--	--	230000	35000	6100000	56000	610000	3600
3,3-Dichlorobenzidine	91-94-1	ug/kg	1100	1000	--	13000	--	280000	--	--	--	--	--	--	--
4,4'-DDD	72-54-8	ug/kg	2000	3000	--	24000	--	520000	--	--	--	--	--	--	--
4,4'-DDE	72-55-9	ug/kg	1400	2000	--	17000	--	370000	--	--	--	--	--	--	--
4,4'-DDT	50-29-3	ug/kg	1700	2000	--	17000	1500000	100000	2100000	--	--	--	--	--	--
4,6-Dinitro-2-Methylphenol	534-52-1	ug/kg	6100	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	106-47-8	ug/kg	2400	310000	--	8200000	--	820000	--	--	--	--	--	--	--
4-Methyl-2-Pentanone	108-10-1	ug/kg	5300000	--	--	--	--	--	--	--	--	--	--	--	--
4-Methylphenol	106-44-5	ug/kg	310000	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	83-32-9	ug/kg	3400000	4700000	--	12000000	--	12000000	--	--	--	--	--	--	--
Acenaphthylene	208-96-8	ug/kg	--	--	--	--	--	--	--	2300000	--	61000000	--	61000000	--
Acetone	67-64-1	ug/kg	61000000	70000000	--	--	100000000	--	100000000	--	--	--	--	--	--
Aldrin	309-00-2	ug/kg	29	40	300	300	6600	6100	9300	--	--	--	--	--	--
Alpha-BHC	319-84-6	ug/kg	77	100	800	900	1500	20000	2100	--	--	--	--	--	--
Alpha-Chlordane	5103-71-9	ug/kg	1600	1800	72000	16000	140000	100000	22000	--	--	--	--	--	--
Aluminum	7429-90-5	mg/kg	77000	--	--	--	--	--	--	78000	1000000	1000000	1000000	410000	870000
Anthracene	120-12-7	ug/kg	17000000	23000000	--	610000000	--	610000000	--	--	--	--	--	--	--
Antimony	7440-36-0	mg/kg	31	31	--	820	--	82	--	--	--	--	--	--	--
Aroclor 1016	12674-11-2	ug/kg	3900	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1221	11104-28-2	ug/kg	140	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1232	11141-16-5	ug/kg	140	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1242	53469-21-9	ug/kg	220	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1248	12672-29-6	ug/kg	220	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1254	11097-69-1	ug/kg	220	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1260	11096-82-5	ug/kg	220	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	7440-38-2	mg/kg	0.39	--	750	--	1200	61	25000	--	--	--	--	--	--
Barium	7440-39-3	mg/kg	15000	5500	690000	140000	910000	14000	870000	--	--	--	--	--	--
Benzene	71-43-2	ug/kg	1100	12000	800	100000	1600	2300000	2200	--	--	--	--	--	--

Table E-1
Summary of Screening Toxicity Values for Soil and Sediment COPC Screening Process

Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain
DePue, Illinois

			USEPA RSLs [1]	IEPA TACO SROs [2]						IEPA non-TACO SROs [3]					
Constituent	CAS number	Units	Residential Soil	Residential Soil Ingestion	Residental Soil Inhalation	Industrial Soil Ingestion	Industrial Soil Inhalation	Construction Soil Ingestion	Construction Soil Inhalation	Residential Soil Ingestion	Residental Soil Inhalation	Industrial Soil Ingestion	Industrial Soil Inhalation	Construction Soil Ingestion	Construction Soil Inhalation
Benzo(a)anthracene	56-55-3	ug/kg	150	900	--	8000	--	170000	--	--	--	--	--	--	--
Benzo(a)pyrene	50-32-8	ug/kg	15	90	--	800	--	1700	--	--	--	--	--	--	--
Benzo(b)fluoranthene	205-99-2	ug/kg	150	900	--	800	--	1700	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	191-24-2	ug/kg	150	--	--	--	--	--	--	2300000	--	61000000	--	61000000	--
Benzo(k)fluoranthene	207-08-9	ug/kg	1500	9000	--	78000	--	1700000	--	--	--	--	--	--	--
Beryllium	7440-41-7	mg/kg	160	160	1300	4100	2100	410	44000	--	--	--	--	--	--
Beta-BHC	319-85-7	ug/kg	270	--	--	--	--	--	--	--	--	--	--	--	--
bis-(2-Chloroethyl)ether	111-44-4	ug/kg	210	600	200	5000	470	75000	660	--	--	--	--	--	--
bis-(2-Ethylhexyl)phthalate	117-81-7	ug/kg	35000	46000	31000000	410000	31000000	4100000	31000000	--	--	--	--	--	--
Bromodichloromethane	75-27-4	ug/kg	270	10000	3000000	92000	3000000	2000000	3000000	--	--	--	--	--	--
Bromoform	75-25-2	ug/kg	61000	81000	53000	720000	100000	16000000	140000	--	--	--	--	--	--
Bromomethane	74-83-9	ug/kg	7300	--	--	2900000	15000	1000000	3900	--	--	--	--	--	--
Butylbenzylphthalate	85-68-7	ug/kg	260000	16000000	930000	410000000	930000	4100000000	930000	--	--	--	--	--	--
Cadmium	7440-43-9	mg/kg	70	78	1800	2000	28000	200	59000	--	--	--	--	--	--
Carbazole	86-74-8	ug/kg	--	32000	--	290000	--	6200000	--	--	--	--	--	--	--
Carbon Disulfide	75-15-0	ug/kg	820000	7800000	720000	200000000	720000	20000000	9000	--	--	--	--	--	--
Carbon Tetrachloride	56-23-5	ug/kg	250	5000	300	44000	640	410000	9000	--	--	--	--	--	--
Chlordane (total)	57-74-9	ug/kg	1600	1800	72000	16000	140000	100000	22000	--	--	--	--	--	--
Chlorobenzene	108-90-7	ug/kg	290000	1600000	130000	41000000	210000	4100000	1300	--	--	--	--	--	--
Chloroethane	75-00-3	ug/kg	15000000	--	--	--	--	--	--	--	1500000		1500000		97000
Chloroform	67-66-3	ug/kg	290	100000	300	940000	540	2000000	760	--	--	--	--	--	--
Chloromethane	74-87-3	ug/kg	120000	--	--	--	--	--	--	--	110000	--	180000	--	11000
Chromium (total)	7440-47-3	mg/kg	--	230	270	6100	420	4100	690	--	--	--	--	--	--
Chrysene	218-01-9	ug/kg	15000	88000	--	780000	--	17000000	--	--	--	--	--	--	--
cis-1,3-Dichloropropene	10061-01-5	ug/kg	1700	6400	1100	57000	2100	1200000	390	--	--	--	--	--	--
Cobalt	7440-48-4	mg/kg	23	4700	--	120000	--	12000	--	--	--	--	--	--	--
Copper	7440-50-8	mg/kg	3100	2900	--	82000	--	8200	--	--	--	--	--	--	--
Cyanide	57-12-5	mg/kg	1600	1600	--	41000	--	4100	--	--	--	--	--	--	--
Delta-BHC [6]	319-86-8	ug/kg	270	--	--	--	--	--	--	--	--	--	--	--	--
Dibenz(a,h)anthracene	53-70-3	ug/kg	15	90	--	800	--	17000	--	--	--	--	--	--	--
Dibenzofuran	132-64-9	ug/kg	78000	--	--	--	--	--	--	--	--	--	--	820000	--
Dibromochloromethane	124-48-1	ug/kg	680	1600000	1300000	41000000	1300000	41000000	1300000	--	--	--	--	--	--
Dieldrin	60-57-1	ug/kg	30	40	1000	400	2200	7800	3100	--	--	--	--	--	--
Diethylphthalate	84-66-2	ug/kg	49000000	63000000	2000000	1000000000	2000000	1000000000	2000000	--	--	--	--	--	--
Dimethylphthalate	131-11-3	ug/kg	--	--	--	--	--	--	--	--	--	--	--	--	--
Di-n-butylphthalate	84-74-2	ug/kg	6100000	7800000	2300000	200000000	2300000	200000000	2300000	--	--	--	--	--	--
Di-n-octylphthalate	117-84-0	ug/kg	--	1600000	10000000	41000000	10000000	41000000	10000000	--	--	--	--	--	--
Endosulfan	115-29-7	ug/kg	370000	470000	--	12000000	--	12000000	--	--	--	--	--	--	--
Endrin	72-20-8	ug/kg	18000	23000	--	610000	--	61000	--	--	--	--	--	--	--
Endrin aldehyde	7421-93-4	ug/kg	18000	23000	--	610000	--	61000	--	--	--	--	--	--	--
Endrin ketone	53494-70-5	ug/kg	18000	23000	--	610000	--	61000	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	ug/kg	5400	7800000	400000	200000000	400000	20000000	58000	--	--	--	--	--	--
Fluoranthene	206-44-0	ug/kg	2300000	3100000	--	82000000	--	82000000	--	--	--	--	--	--	--
Fluorene	86-73-7	ug/kg	2300000	3100000	--	82000000	--	82000000	--	--	--	--	--	--	--
Fluoride	16984-48-8	mg/kg	3100	4700	--	120000	--	12000	--	--	--	--	--	--	--
gamma-BHC (Lindane)	58-89-9	ug/kg	520	500	--	4000	--	96000	--	--	--	--	--	--	--
gamma-Chlordane	5103-74-2	ug/kg	1600	1800	72000	16000	140000	100000	22000	--	--	--	--	--	--
Heptachlor	76-44-8	ug/kg	110	100	100	1000	11000	28000	16000	--	--	--	--	--	--
Heptachlor epoxide	1024-57-3	ug/kg	53	70	5000	600	9200	2700	13000	--	--	--	--	--	--
Hexachlorobenzene	118-74-1	ug/kg	300	400	1000	4000	1800	78000	2600	--	--	--	--	--	--
Hexachlorobutadiene	87-68-3	ug/kg	6200	--	--	--	--	--	--	78000	150000	2000000	150000	200000	72000
Hexachlorocyclopentadiene	77-47-4	ug/kg	370000	550000	10000	14000000	16000	14000000	1100	--	--	--	--	--	--
Hexachloroethane	67-72-1	ug/kg	35000	78000	--	2000000	--	2000000	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	150	900	--	8000	--	170000	--	--	--	--	--	--	--
Iron	7439-89-6	mg/kg	55000	--	--	--	--	--	--	55000	--	1000000	--	140000	--
Isophorone	78-59-1	ug/kg	510000	15600000	4600000	410000000	4600000	410000000	4600000	--	--	--	--	--	--

Table E-1
Summary of Screening Toxicity Values for Soil and Sediment COPC Screening Process

Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain
DePue, Illinois

Constituent	CAS number	Units	USEPA RSLs [1]	IEPA TACO SROs [2]						IEPA non-TACO SROs [3]					
			Residential Soil	Residential Soil Ingestion	Residental Soil Inhalation	Industrial Soil Ingestion	Industrial Soil Inhalation	Construction Soil Ingestion	Construction Soil Inhalation	Residential Soil Ingestion	Residental Soil Inhalation	Industrial Soil Ingestion	Industrial Soil Inhalation	Construction Soil Ingestion	Construction Soil Inhalation
Lead	7439-92-1	mg/kg	400	400	--	800	--	700	--	--	--	--	--	--	--
Magnesium	7439-95-4	mg/kg	--	325000	--	--	--	73000	--	--	--	--	--	--	--
Manganese	7439-96-5	mg/kg	1800	1600	69000	41000	91000	4100	8700	--	--	--	--	--	--
Mercury [5]	7439-97-6	mg/kg	7.8	23	10	610	16	61	0.1	--	--	--	--	--	--
Methoxychlor	72-43-5	ug/kg	310000	390000	--	10000000	--	1000000	--	--	--	--	--	--	--
Methylene Chloride	75-09-2	ug/kg	11000	85000	13000	760000	24000	12000000	34000	--	--	--	--	--	--
Naphthalene	91-20-3	ug/kg	3600	1600000	170000	41000000	270000	4100000	1800	--	--	--	--	--	--
Nickel	7440-02-0	mg/kg	1500	1600	13000	41000	21000	4100	440000	--	--	--	--	--	--
Nitrate as N	14797-55-8	mg/kg	130000	130000	--	1000000	--	330000	--	--	--	--	--	--	--
Nitrobenzene	98-95-3	ug/kg	4.8	39000	92000	1000000	140000	1000000	9400	--	--	--	--	--	--
N-Nitroso-di-n-propylamine	621-64-7	ug/kg	69	90	--	800	--	18000	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	86-30-6	ug/kg	99000	130000	--	1200000	--	25000000	--	--	--	--	--	--	--
PCBs (Total)	1336-36-3	ug/kg	220	1000	--	1000	--	1000	240000	--	--	--	--	--	--
Pentachlorophenol	87-86-5	ug/kg	3000	3000	--	24000	--	520000	--	--	--	--	--	--	--
Phenanthrene	85-01-8	ug/kg	--	--	--	--	--	--	--	2300000	--	61000000	--	61000000	--
Phenol	108-95-2	ug/kg	18000000	23000000	--	610000000	--	61000000	--	--	--	--	--	--	--
Pyrene	129-00-0	ug/kg	1700000	2300000	--	61000000	--	61000000	--	--	--	--	--	--	--
Selenium	7782-49-2	mg/kg	390	390	--	10000	--	1000	--	--	--	--	--	--	--
Silver	7440-22-4	mg/kg	390	390	--	10000	--	1000	--	--	--	--	--	--	--
Styrene	100-42-5	ug/kg	6300000	16000000	1500000	410000000	1500000	41000000	430000	--	--	--	--	--	--
Tetrachloroethene	127-18-4	ug/kg	550	12000	11000	110000	20000	2400000	28000	--	--	--	--	--	--
Thallium	7440-28-0	mg/kg	--	6.3	--	160	--	160	--	--	--	--	--	--	--
Toluene	108-88-3	ug/kg	5000000	16000000	650000	410000000	650000	410000000	42000	--	--	--	--	--	--
Toxaphene	8001-35-2	ug/kg	440	600	89000	5200	170000	110000	12000	--	--	--	--	--	--
trans-1,3-dichloropropene	10061-02-6	ug/kg	1700	6400	1100	57000	2100	1200000	390	--	--	--	--	--	--
Trichloroethene	79-01-6	ug/kg	2800	58000	5000	520000	8900	1200000	12000	--	--	--	--	--	--
Vanadium	7440-62-2	mg/kg	390	550	--	14000	--	1400	--	--	--	--	--	--	--
Vinyl Chloride	75-01-4	ug/kg	60	460	280	7900	1100	170000	1100	--	--	--	--	--	--
Xylene (Total)	1330-20-7	ug/kg	630000	16000000	320000	410000000	320000	41000000	5600	--	--	--	--	--	--
Zinc	7440-66-6	mg/kg	23000000	23000	--	610000	--	61000	--	--	--	--	--	--	--

Table E-1
Summary of Screening Toxicity Values for Soil and Sediment COPC Screening Process

Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain
DePue, Illinois

			IEPA Provisional Objective SROs [4]						DePue Lake	DePue Lake
Constituent	CAS number	Units	Residential Soil Ingestion	Residental Soil Inhalation	Industrial Soil Ingestion	Industrial Soil Inhalation	Construction Soil Ingestion	Construction Soil Inhalation	Selected Screening Toxicity Value (SSTV)	SSTV Source
1,1,1-Trichloroethane	71-55-6	ug/kg	--	--	--	--	--	--	1200000	TACO R INH
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	4700000	2700000	120000000	2000000	12000000	2000000	560	EPA RSL
1,1,2-Trichloroethane	79-00-5	ug/kg	--	--	--	--	--	--	1100	EPA RSL
1,1-Dichloroethane	75-34-3	ug/kg	--	--	--	--	--	--	3300	EPA RSL
1,1-Dichloroethene	75-35-4	ug/kg	--	--	--	--	--	--	3000	TACO C INH
1,2,4-Trichlorobenzene	120-82-1	ug/kg	--	--	--	--	--	--	22000	EPA RSL
1,2-Dichlorobenzene	95-50-1	ug/kg	--	--	--	--	--	--	310000	TACO C INH
1,2-Dichloroethane	107-06-2	ug/kg	--	--	--	--	--	--	400	TACO R INH
1,2-Dichloroethene (Total)	540-59-0	ug/kg	--	--	--	--	--	--	700000	EPA RSL
1,2-Dichloropropane	78-87-5	ug/kg	--	--	--	--	--	--	500	TACO C INH
1,3-Dichlorobenzene	541-73-1	ug/kg	70000	570000	1800000	570000	180000	570000	70000	PO R ING
1,3-Dichloropropene (Total)	542-75-6	ug/kg	--	--	--	--	--	--	390	TACO C INH
1,4-Dichlorobenzene	106-46-7	ug/kg	--	--	--	--	--	--	2400	EPA RSL
1-Methylnaphthalene	90-12-0	ug/kg	--	--	--	--	--	--	22000	EPA RSL
2,2'-oxybis(1-Chloropropane	108-60-1	ug/kg	--	--	--	--	--	--	4600	EPA RSL
2,4,5-Trichlorophenol	95-95-4	ug/kg	--	--	--	--	--	--	6100000	EPA RSL
2,4,6-Trichlorophenol	88-06-2	ug/kg	--	--	--	--	--	--	44000	EPA RSL
2,4-Dichlorophenol	120-83-2	ug/kg	--	--	--	--	--	--	180000	EPA RSL
2,4-Dimethylphenol	105-67-9	ug/kg	--	--	--	--	--	--	1200000	EPA RSL
2,4-Dinitrophenol	51-28-5	ug/kg	--	--	--	--	--	--	120000	EPA RSL
2,4-Dinitrotoluene	121-14-2	ug/kg	--	--	--	--	--	--	840	NA
2,6-Dinitrotoluene	606-20-2	ug/kg	--	--	--	--	--	--	840	NA
2-Butanone	78-93-3	ug/kg	--	--	--	--	--	--	28000000	EPA RSL
2-Chloronaphthalene	91-58-7	ug/kg	--	--	--	--	--	--	6300000	EPA RSL
2-Chlorophenol	95-57-8	ug/kg	--	--	--	--	--	--	390000	TACO R ING
2-Hexanone	591-78-6	ug/kg	3100000	70000	82000000	110000	8200000	720	720	PO C INH
2-Methylnaphthalene	91-57-6	ug/kg	700000	--	18000000	--	1800000	--	310000	EPA RSL
2-Methylphenol	95-48-7	ug/kg	--	--	--	--	--	--	390000	TACO R ING
2-Nitroaniline	88-74-4	ug/kg	--	73000	--	120000	--	7500	3600	NON-TACO C INH
3,3-Dichlorobenzidine	91-94-1	ug/kg	--	--	--	--	--	--	1000	TACO R ING
4,4'-DDD	72-54-8	ug/kg	--	--	--	--	--	--	2000	EPA RSL
4,4'-DDE	72-55-9	ug/kg	--	--	--	--	--	--	1400	EPA RSL
4,4'-DDT	50-29-3	ug/kg	--	--	--	--	--	--	1700	EPA RSL
4,6-Dinitro-2-Methylphenol	534-52-1	ug/kg	27000	--	720000	--	720000	--	6100	EPA RSL
4-Chloroaniline	106-47-8	ug/kg	--	--	--	--	--	--	2400	EPA RSL
4-Methyl-2-Pentanone	108-10-1	ug/kg	--	--	--	--	--	--	5300000	EPA RSL
4-Methylphenol	106-44-5	ug/kg	--	--	--	--	--	--	310000	EPA RSL
Acenaphthene	83-32-9	ug/kg	--	--	--	--	--	--	3400000	EPA RSL
Acenaphthylene	208-96-8	ug/kg	2300000	--	61000000	--	61000000	--	2300000	NON-TACO R ING
Acetone	67-64-1	ug/kg	--	--	--	--	--	--	61000000	EPA RSL
Aldrin	309-00-2	ug/kg	--	--	--	--	--	--	29	EPA RSL
Alpha-BHC	319-84-6	ug/kg	--	--	--	--	--	--	77	EPA RSL
Alpha-Chlordane	5103-71-9	ug/kg	--	--	--	--	--	--	1600	EPA RSL
Aluminum	7429-90-5	mg/kg	78000	--	1000000	--	200000	--	77000	EPA RSL
Anthracene	120-12-7	ug/kg	--	--	--	--	--	--	17000000	EPA RSL
Antimony	7440-36-0	mg/kg	--	--	--	--	--	--	31	TACO R ING
Aroclor 1016	12674-11-2	ug/kg	--	--	--	--	--	--	3900	EPA RSL
Aroclor 1221	11104-28-2	ug/kg	--	--	--	--	--	--	140	EPA RSL
Aroclor 1232	11141-16-5	ug/kg	--	--	--	--	--	--	140	EPA RSL
Aroclor 1242	53469-21-9	ug/kg	--	--	--	--	--	--	220	EPA RSL
Aroclor 1248	12672-29-6	ug/kg	--	--	--	--	--	--	220	EPA RSL
Aroclor 1254	11097-69-1	ug/kg	--	--	--	--	--	--	220	EPA RSL
Aroclor 1260	11096-82-5	ug/kg	--	--	--	--	--	--	220	EPA RSL
Arsenic	7440-38-2	mg/kg	--	--	--	--	--	--	0.39	EPA RSL
Barium	7440-39-3	mg/kg	--	--	--	--	--	--	5500	TACO R ING
Benzene	71-43-2	ug/kg	--	--	--	--	--	--	800	TACO R INH

Table E-1
Summary of Screening Toxicity Values for Soil and Sediment COPC Screening Process

Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain
DePue, Illinois

			IEPA Provisional Objective SROs [4]						DePue Lake	DePue Lake
Constituent	CAS number	Units	Residential Soil Ingestion	Residental Soil Inhalation	Industrial Soil Ingestion	Industrial Soil Inhalation	Construction Soil Ingestion	Construction Soil Inhalation	Selected Screening Toxicity Value (SSTV)	SSTV Source
Benzo(a)anthracene	56-55-3	ug/kg	--	--	--	--	--	--	150	EPA RSL
Benzo(a)pyrene	50-32-8	ug/kg	--	--	--	--	--	--	15	EPA RSL
Benzo(b)fluoranthene	205-99-2	ug/kg	--	--	--	--	--	--	150	EPA RSL
Benzo(g,h,i)perylene	191-24-2	ug/kg	2300000	--	61000000	--	61000000	--	150	EPA RSL
Benzo(k)fluoranthene	207-08-9	ug/kg	--	--	--	--	--	--	1500	EPA RSL
Beryllium	7440-41-7	mg/kg	--	--	--	--	--	--	160	TACO R ING
Beta-BHC	319-85-7	ug/kg	--	--	--	--	--	--	270	EPA RSL
bis-(2-Chloroethyl)ether	111-44-4	ug/kg	--	--	--	--	--	--	200	TACO R INH
bis-(2-Ethylhexyl)phthalate	117-81-7	ug/kg	--	--	--	--	--	--	35000	EPA RSL
Bromodichloromethane	75-27-4	ug/kg	--	--	--	--	--	--	270	EPA RSL
Bromoform	75-25-2	ug/kg	--	--	--	--	--	--	53000	TACO R INH
Bromomethane	74-83-9	ug/kg	--	--	--	--	--	--	3900	TACO C INH
Butylbenzylphthalate	85-68-7	ug/kg	--	--	--	--	--	--	260000	EPA RSL
Cadmium	7440-43-9	mg/kg	--	--	--	--	--	--	70	EPA RSL
Carbazole	86-74-8	ug/kg	--	--	--	--	--	--	32000	TACO R ING
Carbon Disulfide	75-15-0	ug/kg	--	--	--	--	--	--	9000	TACO C INH
Carbon Tetrachloride	56-23-5	ug/kg	--	--	--	--	--	--	250	EPA RSL
Chlordane (total)	57-74-9	ug/kg	--	--	--	--	--	--	1600	EPA RSL
Chlorobenzene	108-90-7	ug/kg	--	--	--	--	--	--	1300	TACO C INH
Chloroethane	75-00-3	ug/kg	31000000	1500000	820000000	1500000	82000000	94000	97000	NON-TACO C INH
Chloroform	67-66-3	ug/kg	--	--	--	--	--	--	290	EPA RSL
Chloromethane	74-87-3	ug/kg	310000	110000	8200000	170000	820000	1100	1100	PO C INH
Chromium (total)	7440-47-3	mg/kg	--	--	--	--	--	--	230	TACO R ING
Chrysene	218-01-9	ug/kg	--	--	--	--	--	--	15000	EPA RSL
cis-1,3-Dichloropropene	10061-01-5	ug/kg	--	--	--	--	--	--	390	TACO C INH
Cobalt	7440-48-4	mg/kg	--	--	--	--	--	--	23	EPA RSL
Copper	7440-50-8	mg/kg	--	--	--	--	--	--	2900	TACO R ING
Cyanide	57-12-5	mg/kg	--	--	--	--	--	--	1600	TACO R ING
Delta-BHC [6]	319-86-8	ug/kg	--	--	--	--	--	--	270	EPA RSL
Dibenz(a,h)anthracene	53-70-3	ug/kg	--	--	--	--	--	--	15	EPA RSL
Dibenzofuran	132-64-9	ug/kg	310000	--	8200000	--	820000	570000	78000	EPA RSL
Dibromochloromethane	124-48-1	ug/kg	--	--	--	--	--	--	680	EPA RSL
Dieldrin	60-57-1	ug/kg	--	--	--	--	--	--	30	EPA RSL
Diethylphthalate	84-66-2	ug/kg	--	--	--	--	--	--	2000000	TACO R INH
Dimethylphthalate	131-11-3	ug/kg	780000000	1300000	1000000000	1300000	1000000000	1300000	1300000	PO R INH
Di-n-butylphthalate	84-74-2	ug/kg	--	--	--	--	--	--	2300000	TACO R INH
Di-n-octylphthalate	117-84-0	ug/kg	--	--	--	--	--	--	1600000	TACO R ING
Endosulfan	115-29-7	ug/kg	--	--	--	--	--	--	370000	EPA RSL
Endrin	72-20-8	ug/kg	--	--	--	--	--	--	18000	EPA RSL
Endrin aldehyde	7421-93-4	ug/kg	--	--	--	--	--	--	18000	EPA RSL
Endrin ketone	53494-70-5	ug/kg	--	--	--	--	--	--	18000	EPA RSL
Ethylbenzene	100-41-4	ug/kg	--	--	--	--	--	--	5400	EPA RSL
Fluoranthene	206-44-0	ug/kg	--	--	--	--	--	--	2300000	EPA RSL
Fluorene	86-73-7	ug/kg	--	--	--	--	--	--	2300000	EPA RSL
Fluoride	16984-48-8	mg/kg	--	--	--	--	--	--	3100	EPA RSL
gamma-BHC (Lindane)	58-89-9	ug/kg	--	--	--	--	--	--	500	TACO R ING
gamma-Chlordane	5103-74-2	ug/kg	--	--	--	--	--	--	1600	EPA RSL
Heptachlor	76-44-8	ug/kg	--	--	--	--	--	--	100	TACO R ING
Heptachlor epoxide	1024-57-3	ug/kg	--	--	--	--	--	--	53	EPA RSL
Hexachlorobenzene	118-74-1	ug/kg	--	--	--	--	--	--	300	EPA RSL
Hexachlorobutadiene	87-68-3	ug/kg	--	--	--	--	--	--	6200	EPA RSL
Hexachlorocyclopentadiene	77-47-4	ug/kg	--	--	--	--	--	--	1100	TACO C INH
Hexachloroethane	67-72-1	ug/kg	--	--	--	--	--	--	35000	EPA RSL
Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	--	--	--	--	--	--	150	EPA RSL
Iron	7439-89-6	mg/kg	--	--	--	--	--	--	55000	NON-TACO R ING
Isophorone	78-59-1	ug/kg	--	--	--	--	--	--	510000	EPA RSL

Table E-1
Summary of Screening Toxicity Values for Soil and Sediment COPC Screening Process

Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain
DePue, Illinois

			IEPA Provisional Objective SROs [4]						DePue Lake	DePue Lake
Constituent	CAS number	Units	Residential Soil Ingestion	Residental Soil Inhalation	Industrial Soil Ingestion	Industrial Soil Inhalation	Construction Soil Ingestion	Construction Soil Inhalation	Selected Screening Toxicity Value (SSTV)	SSTV Source
Lead	7439-92-1	mg/kg	--	--	--	--	--	--	400	TACO R ING
Magnesium	7439-95-4	mg/kg	--	--	--	--	--	--	73000	TACO C ING
Manganese	7439-96-5	mg/kg	--	--	--	--	--	--	1600	TACO R ING
Mercury [5]	7439-97-6	mg/kg	--	--	--	--	--	--	7.8	EPA RSL
Methoxychlor	72-43-5	ug/kg	--	--	--	--	--	--	310000	EPA RSL
Methylene Chloride	75-09-2	ug/kg	--	--	--	--	--	--	11000	EPA RSL
Naphthalene	91-20-3	ug/kg	--	--	--	--	--	--	1800	TACO C INH
Nickel	7440-02-0	mg/kg	--	--	--	--	--	--	1500	EPA RSL
Nitrate as N	14797-55-8	mg/kg	--	--	--	--	--	--	130000	TACO R ING
Nitrobenzene	98-95-3	ug/kg	--	--	--	--	--	--	4.8	EPA RSL
N-Nitroso-di-n-propylamine	621-64-7	ug/kg	--	--	--	--	--	--	69	EPA RSL
N-Nitrosodiphenylamine	86-30-6	ug/kg	--	--	--	--	--	--	130000	TACO R ING
PCBs (Total)	1336-36-3	ug/kg	--	--	--	--	--	--	220	EPA RSL
Pentachlorophenol	87-86-5	ug/kg	--	--	--	--	--	--	3000	TACO R ING
Phenanthrene	85-01-8	ug/kg	2300000	--	61000000	--	61000000	--	2300000	NON-TACO R ING
Phenol	108-95-2	ug/kg	--	--	--	--	--	--	18000000	EPA RSL
Pyrene	129-00-0	ug/kg	--	--	--	--	--	--	1700000	EPA RSL
Selenium	7782-49-2	mg/kg	--	--	--	--	--	--	390	TACO R ING
Silver	7440-22-4	mg/kg	--	--	--	--	--	--	390	TACO R ING
Styrene	100-42-5	ug/kg	--	--	--	--	--	--	430000	TACO C INH
Tetrachloroethene	127-18-4	ug/kg	--	--	--	--	--	--	550	EPA RSL
Thallium	7440-28-0	mg/kg	--	--	--	--	--	--	6.3	TACO R ING
Toluene	108-88-3	ug/kg	--	--	--	--	--	--	42000	TACO C INH
Toxaphene	8001-35-2	ug/kg	--	--	--	--	--	--	440	EPA RSL
trans-1,3-dichloropropene	10061-02-6	ug/kg	--	--	--	--	--	--	390	TACO C INH
Trichloroethene	79-01-6	ug/kg	--	--	--	--	--	--	2800	EPA RSL
Vanadium	7440-62-2	mg/kg	--	--	--	--	--	--	390	EPA RSL
Vinyl Chloride	75-01-4	ug/kg	--	--	--	--	--	--	60	EPA RSL
Xylene (Total)	1330-20-7	ug/kg	--	--	--	--	--	--	5600	TACO C INH
Zinc	7440-66-6	mg/kg	--	--	--	--	--	--	23000	TACO R ING

Table E-1
Summary of Screening Toxicity Values for Soil and Sediment COPC Screening Process

Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain
DePue, Illinois

Notes:

1. USEPA Regional Screening Levels for Residential Soil (USEPA, 2009a)
2. Part 742 Tiered Approach to Corrective Action Objectives (TACO) Tier 1 Soil Remediation Objectives (Residential, Industrial/Commercial, or Construction Worker) (IEPA 2007a)
3. Non-TACO Soil Remediation Objectives (Residential, Industrial/Commercial, or Construction Worker) (IEPA 2007b)
4. IEPA Provisional Objectives provided to Serese Marotta, Soil Remediation Objectives (IEPA, 2004)
5. Although the TACO construction worker inhalation value for mercury (0.1 mg/kg) is the most conservative screening value, the 2007 TACO guidance specifically indicates that inhalation values for mercury should not be used unless elemental mercury is a contaminant of concern for the site.
   Because this is not the case for the DePue site, the USEPA RSL for methylmercury is alternatively used as the final screening criterion to evaluate direct contact exposures for soil and sediment.
6. The USEPA RSL for Beta-BHC was used as a surrogate for Delta-BHC.

Table E-2
Summary of Screening Toxicity Values for Soil to Groundwater COPCs Screening

Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain
DePue, Illinois

Analyte	CAS Number	Criteria Units	IEPA TACO SROs Soil to GW Component [1]		IEPA Non-TACO SROs [2]	IEPA Provisional Objective SROs [3]		USEPA RSL [4]	DePue Lake	DePue Lake
			Residential Class 1	Industrial/ Commercial Class 1	Migration to GW	Residential Class 1	Industrial/ Commercial Class 1	Protection of GW Risk-based SSL	Selected Screening Toxicity Value	SSTV Source
1,1,1-Trichloroethane	71-55-6	ug/kg	2000	2000	--	--	--	--	2000	TACO R
1,1,2,2-Tetrachloroethane	79-34-5	ug/kg	--	--	220	3300	3300	--	220	NON-TACO
1,1,2-Trichloroethane	79-00-5	ug/kg	20	20	--	--	--	--	20	TACO R
1,1-Dichloroethane	75-34-3	ug/kg	23000	23000	--	--	--	--	23000	TACO R
1,1-Dichloroethene	75-35-4	ug/kg	60	60	--	--	--	--	60	TACO R
1,2,4-Trichlorobenzene	120-82-1	ug/kg	5000	5000	--	--	--	--	5000	TACO R
1,2-Dichlorobenzene	95-50-1	ug/kg	17000	17000	--	--	--	--	17000	TACO R
1,2-Dichloroethane	107-06-2	ug/kg	20	20	--	--	--	--	20	TACO R
1,2-Dichloroethene (Total)	540-59-0	ug/kg	400	400	--	--	--	--	400	TACO R
1,2-Dichloropropane	78-87-5	ug/kg	30	30	--	--	--	--	30	TACO R
1,3-Dichlorobenzene	541-73-1	ug/kg	--	--	--	200	200	--	200	PO R
1,3-Dichloropropene (Total)	542-75-6	ug/kg	4	4	--	--	--	--	4	TACO R
1,4-Dichlorobenzene	106-46-7	ug/kg	2000	2000	--	--	--	--	2000	TACO R
1-Methylnaphthalene	90-12-0	ug/kg	--	--	130000	--	--	--	130000	NON-TACO
2,4,5-Trichlorophenol	95-95-4	ug/kg	270000	270000	--	--	--	--	270000	TACO R
2,4,6-Trichlorophenol	88-06-2	ug/kg	200	200	--	--	--	--	200	TACO R
2,4-Dichlorophenol	120-83-2	ug/kg	1000	1000	--	--	--	--	1000	TACO R
2,4-Dimethylphenol	105-67-9	ug/kg	9000	9000	--	--	--	--	9000	TACO R
2,4-Dinitrophenol	51-28-5	ug/kg	200	200	--	--	--	--	200	TACO R
2,4-Dinitrotoluene	121-14-2	ug/kg	0.8	0.8	--	--	--	--	0.8	TACO R
2,6-Dinitrotoluene	606-20-2	ug/kg	0.7	0.7	--	--	--	--	0.7	TACO R
2-Butanone	78-93-3	ug/kg	--	--	--	--	--	--	NA	NA
2-Chloronaphthalene	91-58-7	ug/kg	--	--	49000	--	--	--	49000	NON-TACO
2-Chlorophenol	95-57-8	ug/kg	4000	4000	--	--	--	--	4000	TACO R
2-Hexanone	591-78-6	ug/kg	--	--	--	1300	1300	--	1300	PO R
2-Methylnaphthalene	91-57-6	ug/kg	--	--	--	17000	17000	--	17000	PO R
2-Methylphenol	95-48-7	ug/kg	15000	15000	--	--	--	--	15000	TACO R
2-Nitroaniline	88-74-4	ug/kg	--	--	140	--	--	--	140	NON-TACO
3,3-Dichlorobenzidine	91-94-1	ug/kg	7	7	--	--	--	--	7	TACO R
4,4'-DDD	72-54-8	ug/kg	16000	16000	--	--	--	--	16000	TACO R
4,4'-DDE	72-55-9	ug/kg	54000	54000	--	--	--	--	54000	TACO R
4,4'-DDT	50-29-3	ug/kg	32000	32000	--	--	--	--	32000	TACO R
4,6-Dinitro-2-Methylphenol	534-52-1	ug/kg	--	--	3.1	40	40	--	3.1	NON-TACO
4-Chloroaniline	106-47-8	ug/kg	700	700		--	--	--	700	TACO R
4-Methyl-2-Pentanone	108-10-1	ug/kg	--	--	--	--	--	--	NA	NA
4-Methylphenol	106-44-5	ug/kg	--	--	200	--	--	--	200	NON-TACO
Acenaphthene	83-32-9	ug/kg	570000	570000	--	--	--	--	570000	TACO R
Acenaphthylene	208-96-8	ug/kg	--	--	85000	24000	24000	--	24000	PO R
Acetone	67-64-1	ug/kg	25000	25000	--	--	--	--	25000	TACO R
Aldrin	309-00-2	ug/kg	500	500	--	--	--	--	500	TACO R
Alpha-BHC	319-84-6	ug/kg	0.5	0.5	--	--	--	--	0.5	TACO R
Aluminum	7429-90-5	mg/kg	--	--	--	--	--	55000	55000	EPA SSL
Aluminum (leached)	7429-90-5 (leached)	mg/L	--	--	3.5	--	--	--	3.5	NON-TACO
Anthracene	120-12-7	ug/kg	12000000	12000000	--	--	--	--	12000000	TACO R
Antimony	7440-36-0	mg/kg	--	5	--	--	--	--	5	TACO I/C
Antimony (leached)	7440-36-0 (leached)	mg/L	0.006	0.006	--	--	--	--	0.006	TACO R
Aroclor 1016	12674-11-2	ug/kg	--	--	--	--	--	92	92	EPA SSL
Aroclor 1221	11104-28-2	ug/kg	--	--	--	--	--	0.12	0.12	EPA SSL
Aroclor 1232	11141-16-5	ug/kg	--	--	--	--	--	0.12	0.12	EPA SSL
Aroclor 1242	53469-21-9	ug/kg	--	--	--	--	--	5.3	5.3	EPA SSL
Aroclor 1248	12672-29-6	ug/kg	--	--	--	--	--	5.2	5.2	EPA SSL
Aroclor 1254	11097-69-1	ug/kg	--	--	--	--	--	8.8	8.8	EPA SSL
Aroclor 1260	11096-82-5	ug/kg	--	--	--	--	--	24	24	EPA SSL
Arsenic	7440-38-2	mg/kg	--	30	--	--	--	--	30	TACO I/C
Arsenic (leached)	7440-38-2 (leached)	mg/L	0.05	0.05	--	--	--	--	0.05	TACO R
Barium	7440-39-3	mg/kg	--	1800	--	--	--	--	1800	TACO I/C
Barium (leached)	7440-39-3 (leached)	mg/L	2	2	--	--	--	--	2	TACO R
Benzene	71-43-2	ug/kg	30	30	--	--	--	--	30	TACO R
Benzo(a)anthracene	56-55-3	ug/kg	2000	2000	--	--	--	--	2000	TACO R
Benzo(a)pyrene	50-32-8	ug/kg	8000	8000	--	--	--	--	8000	TACO R
Benzo(b)fluoranthene	205-99-2	ug/kg	5000	5000	--	--	--	--	5000	TACO R
Benzo(g,h,i)perylene	191-24-2	ug/kg	--	--	27000000	32000000	32000000	--	27000000	NON-TACO
Benzo(k)fluoranthene	207-08-9	ug/kg	49000	49000	--	--	--	--	49000	TACO R
Beryllium	7440-41-7	mg/kg	--	1000	--	--	--	--	1000	TACO I/C
Beryllium (leached)	7440-41-7 (leached)	mg/L	0.004	0.004	--	--	--	--	0.004	TACO R
Beta-BHC	319-85-7	ug/kg	--	--	--	--	--	--	NA	NA
bis-(2-Chloroethyl)ether	111-44-4	ug/kg	0.4	0.4	--	--	--	--	0.4	TACO R
bis-(2-Ethylhexyl)phthalate	117-81-7	ug/kg	3600000	3600000	--	--	--	--	3600000	TACO R
Bromodichloromethane	75-27-4	ug/kg	600	600	--	--	--	--	600	TACO R
Bromoform	75-25-2	ug/kg	800	800	--	--	--	--	800	TACO R
Bromomethane	74-83-9	ug/kg	200	200	--	--	--	--	200	TACO R
Butylbenzylphthalate	85-68-7	ug/kg	930000	930000	--	--	--	--	930000	TACO R
Cadmium	7440-43-9	mg/kg	--	59	--	--	--	--	59	TACO I/C
Cadmium (leached)	7440-43-9 (leached)	mg/L	0.005	0.005	--	--	--	--	0.005	TACO R
Carbazole	86-74-8	ug/kg	600	600	--	--	--	--	600	TACO R
Carbon Disulfide	75-15-0	ug/kg	32000	32000	--	--	--	--	32000	TACO R
Carbon Tetrachloride	56-23-5	ug/kg	70	70	--	--	--	--	70	TACO R
Chlordane (total)	57-74-9	ug/kg	10000	10000	--	--	--	--	10000	TACO R
Chloride	16887-00-6	mg/kg	--	--	--	--	--	--	NA	NA
Chloride (leached)	16887-00-6 (leached	mg/L	200	200	--	--	--	--	200	TACO R
Chlorobenzene	108-90-7	ug/kg	1000	1000	--	--	--	--	1000	TACO R
Chloroethane	75-00-3	ug/kg	--	--	--	15000	15000	--	15000	PO R

Table E-2
Summary of Screening Toxicity Values for Soil to Groundwater COPCs Screening

Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain
DePue, Illinois

Analyte	CAS Number	Criteria Units	IEPA TACO SROs Soil to GW Component [1]		IEPA Non-TACO SROs [2]	IEPA Provisional Objective SROs [3]		USEPA RSL [4]	DePue Lake	DePue Lake
			Residential Class 1	Industrial/ Commercial Class 1	Migration to GW	Residential Class 1	Industrial/ Commercial Class 1	Protection of GW Risk-based SSL	Selected Screening Toxicity Value	SSTV Source
Chloroform	67-66-3	ug/kg	600	600	--	--	--	--	600	TACO R
Chloromethane	74-87-3	ug/kg	--	--	--	140	140	--	140	PO R
Chromium	7440-47-3	mg/kg	--	32	--	--	--	--	32	TACO I/C
Chromium (leached)	7440-47-3 (leached)	mg/L	0.1	0.1	--	--	--	--	0.1	TACO R
Chrysene	218-01-9	ug/kg	160000	160000	--	--	--	--	160000	TACO R
Cobalt	7440-48-4	mg/kg	--	--	--	--	--	0.49	0.49	EPA SSL
Cobalt (leached)	7440-48-4 (leached)	mg/L	1	1	--	--	--	--	1	TACO R
Copper	7440-50-8	mg/kg	--	330000	--	--	--	--	330000	TACO I/C
Copper (leached)	7440-50-8 (leached)	mg/L	0.65	0.65	--	--	--	--	0.65	TACO R
Cyanide	57-12-5	mg/kg	--	40	--	--	--	--	40	TACO I/C
Cyanide (leached)	57-12-5 (leached)	mg/L	0.2	0.2	--	--	--	--	0.2	TACO R
Delta-BHC	319-86-8	ug/kg	--	--	--	--	--	--	NA	NA
Dibenz(a,h)anthracene	53-70-3	ug/kg	2000	2000	--	--	--	--	2000	TACO R
Dibenzofuran	132-64-9	ug/kg	--	--	--	15000	15000	--	15000	PO R
Dibromochloromethane	124-48-1	ug/kg	400	400	--	--	--	--	400	TACO R
Dieldrin	60-57-1	ug/kg	4	4	--	--	--	--	4	TACO R
Diethylphthalate	84-66-2	ug/kg	470000	470000	--	--	--	--	470000	TACO R
Dimethylphthalate	131-11-3	ug/kg	--	--	--	380000	380000	--	380000	PO R
Di-n-butylphthalate	84-74-2	ug/kg	--	2300000	--	--	--	--	2300000	TACO I/C
Di-n-octylphthalate	117-84-0	ug/kg	10000000	10000000	--	--	--	--	10000000	TACO R
Endosulfan	115-29-7	ug/kg	18000	18000	--	--	--	--	18000	TACO R
Endrin	72-20-8	ug/kg	1000	1000	--	--	--	--	1000	TACO R
Endrin aldehyde [6]	7421-93-4	ug/kg	1000	1000	--	--	--	--	1000	TACO R
Endrin ketone [6]	53494-70-5	ug/kg	1000	1000	--	--	--	--	1000	TACO R
Ethylbenzene	100-41-4	ug/kg	13000	13000	--	--	--	--	13000	TACO R
Fluoranthene	206-44-0	ug/kg	4300000	4300000	--	--	--	--	4300000	TACO R
Fluorene	86-73-7	ug/kg	560000	560000	--	--	--	--	560000	TACO R
Fluoride	16984-48-8	mg/kg	--	--	--	--	--	--	NA	NA
Fluoride (leached)	16984-48-8 (leached	mg/L	4	4	--	--	--	--	4	TACO R
gamma-BHC (Lindane)	58-89-9	ug/kg	9	9	--	--	--	--	9	TACO R
gamma-Chlordane [4]	5103-74-2	ug/kg	10000	10000	--	--	--	--	10000	TACO R
Heptachlor	76-44-8	ug/kg	23000	23000	--	--	--	--	23000	TACO R
Heptachlor epoxide	1024-57-3	ug/kg	700	700	--	--	--	--	700	TACO R
Hexachlorobenzene	118-74-1	ug/kg	2000	2000	--	--	--	--	2000	TACO R
Hexachlorobutadiene	87-68-3	ug/kg	--	--	2200	--	--	--	2200	NON-TACO
Hexachlorocyclopentadiene	77-47-4	ug/kg	400000	400000	--	--	--	--	400000	TACO R
Hexachloroethane	67-72-1	ug/kg	500	500	--	--	--	--	500	TACO R
Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	14000	14000	--	--	--	--	14000	TACO R
Iron	7439-89-6	mg/kg	--	--	--	--	--	640	640	EPA SSL
Iron (leached)	7439-89-6 (leached)	mg/L	5	5	--	--	--	--	5	TACO R
Isophorone	78-59-1	ug/kg	8000	8000	--	--	--	--	8000	TACO R
Lead	7439-92-1	mg/kg		107	--	--	--	--	107	TACO I/C
Lead (leached)	7439-92-1 (leached)	mg/L	0.0075	0.0075	--	--	--	--	0.0075	TACO R
Magnesium	7439-95-4	mg/kg	--	--	--	--	--	--	NA	NA
Magnesium (leached)	7439-95-4 (leached)	mg/L	--	--	--	--	--	--	NA	NA
Manganese	7439-96-5	mg/kg	--	--	--	--	--	57	57	EPA SSL
Manganese (leached)	7439-96-5 (leached)	mg/L	0.15	0.15	--	--	--	--	0.15	TACO R
Mercury	7439-97-6	mg/kg	6.4	6.4	--	--	--	--	6.4	TACO R
Mercury (leached)	7439-97-6 (leached)	mg/L	0.002	0.002	--	--	--	--	0.002	TACO R
Methoxychlor	72-43-5	ug/kg	160000	160000	--	--	--	--	160000	TACO R
Methylene Chloride	75-09-2	ug/kg	20	20	--	--	--	--	20	TACO R
Naphthalene	91-20-3	ug/kg	12000	12000	--	--	--	--	12000	TACO R
Nickel	7440-02-0	mg/kg	--	700	--	--	--	--	700	TACO I/C
Nickel (leached)	7440-02-0 (leached)	mg/L	0.1	0.1	--	--	--	--	0.1	TACO R
Nitrate as N	N03	mg/kg	--	--	--	--	--	--	NA	NA
Nitrate as N (leached)	N03 (leached)	mg/L	10	10	--	--	--	--	10	TACO R
Nitrobenzene	98-95-3	ug/kg	100	100	--	--	--	--	100	TACO R
N-Nitroso-di-n-propylamine	621-64-7	ug/kg	0.05	0.05	--	--	--	--	0.05	TACO R
N-Nitrosodiphenylamine	86-30-6	ug/kg	1000	1000	--	--	--	--	1000	TACO R
PCBs (Total)	1336-36-3	ug/kg	--	--	--	--	--	--	NA	NA
Pentachlorophenol	87-86-5	ug/kg	30	30	--	--	--	--	30	TACO R
Phenanthrene	85-01-8	ug/kg	--	--	200000	220000	220000	--	200000	NON-TACO
Phenol	108-95-2	ug/kg	100000	100000	--	--	--	--	100000	TACO R
Pyrene	129-00-0	ug/kg	4200000	4200000	--	--	--	--	4200000	TACO R
Selenium	7782-49-2	mg/kg	--	3.3	--	--	--	--	3.3	TACO I/C
Selenium (leached)	7782-49-2 (leached)	mg/L	0.05	0.05	--	--	--	--	0.05	TACO R
Silver	7440-22-4	mg/kg	--	39	--	--	--	--	39	TACO I/C
Silver (leached)	7440-22-4 (leached)	mg/L	0.05	0.05	--	--	--	--	0.05	TACO R
Styrene	100-42-5	ug/kg	4000	4000	--	--	--	--	4000	TACO R
Sulfate	14808-79-8	mg/kg	--	--	--	--	--	--	NA	NA
Sulfate (leached)	14808-79-8 (leached	mg/L	400	400	--	--	--	--	400	TACO R
Tetrachloroethene	127-18-4	ug/kg	60	60	--	--	--	--	60	TACO R
Thallium	7440-28-0	mg/kg	--	3.4	--	--	--	--	3.4	TACO I/C
Thallium (leached)	7440-28-0 (leached)	mg/L	0.002	0.002	--	--	--	--	0.002	TACO R
Toluene	108-88-3	ug/kg	12000	12000	--	--	--	--	12000	TACO R
Toxaphene	8001-35-2	ug/kg	31000	31000	--	--	--	--	31000	TACO R
Trichloroethene	79-01-6	ug/kg	60	60	--	--	--	--	60	TACO R
Vanadium	7440-62-2	mg/kg	--	980	--	--	--	--	980	TACO I/C
Vanadium (leached)	7440-62-2 (leached)	mg/L	0.049	0.049	--	--	--	--	0.049	TACO R
Vinyl Chloride	75-01-4	ug/kg	10	10	--	--	--	--	10	TACO R
Xylene (Total)	1330-20-7	ug/kg	150000	150000	--	--	--	--	150000	TACO R

Table E-2
Summary of Screening Toxicity Values for Soil to Groundwater COPCs Screening

Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain
DePue, Illinois

Analyte	CAS Number	Criteria Units	IEPA TACO SROs Soil to GW Component [1]		IEPA Non-TACO SROs [2]	IEPA Provisional Objective SROs [3]		USEPA RSL [4]	DePue Lake	DePue Lake
			Residential Class 1	Industrial/ Commercial Class 1	Migration to GW	Residential Class 1	Industrial/ Commercial Class 1	Protection of GW Risk-based SSL	Selected Screening Toxicity Value	SSTV Source
Zinc	7440-66-6	mg/kg	--	16000	--	--	--	--	16000	TACO I/C
Zinc (leached)	7440-66-6 (leached)	mg/L	5	5	--	--	--	--	5	TACO R

Notes:
1. Part 742 Tiered Approach to Corrective Action Objectives (TACO) Tier 1 Soil Remediation Objectives Soil to Groundwater Component Class 1. (IEPA 2007a)
2. Non-TACO SROs Migration to Class 1 Groundwater (IEPA 2007b, tables updated 1/2009)
3. IEPA Provisional Objectives provided to Serese Marotta, Groundwater Objectives (IEPA, 2004)
4. USEPA Regional Screening Levels: Risk-based SSLs for Protection of Groundwater (used if no other STV exists) (USEPA, 2009a)
5. The IEPA RSO for Total Chlordane was used as a surrogate for gamma-Chlordane.
6. The IEPA RSO for Endrin was used as a surrogate for Endrin aldehyde and Endrin ketone.

Table E-3
Summary of Screening Toxicity Values for Groundwater Seep and Surface Water COPCs Screening

Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain
DePue, Illinois

Analyte	CAS Number	Units	USEPA [1]	IEPA Derived Water Quality Criteria [2,3]		TACO GROs [4]	Non-TACO GROs [5]	IEPA Provisional Objective GROs [6]	DePue Lake	DePue Lake
			MCLs	HTC	HNC	Class 1	Class 1	Class 1	Selected Screening Toxicity Value (SSTV)	SSTV Source
1,1,1-Trichloroethane	71-55-6	ug/L	200	--	--	200	--	--	200	TACO
1,1,2,2-Tetrachloroethane	79-34-5	ug/L	--	--	3.2	--	420	--	3.2	IEPA HNC
1,1,2-Trichloroethane	79-00-5	ug/L	5	--	12	5	--	--	5	TACO
1,1-Dichloroethane	75-34-3	ug/L	--	--	--	700	--	--	700	TACO
1,1-Dichloroethene	75-35-4	ug/L	7	--	0.095	7	--	--	0.095	IEPA HNC
1,2,4-Trichlorobenzene	120-82-1	ug/L	70	--	--	70	--	--	70	TACO
1,2-Dichlorobenzene	95-50-1	ug/L	--	--	--	600	--	--	600	TACO
1,2-Dichloroethane	107-06-2	ug/L	5	--	23	5	--	--	5	TACO
1,2-Dichloroethene (Total)	540-59-0	ug/L	70	--	--	--	--	--	70	EPA MCL
1,2-Dichloropropane	78-87-5	ug/L	5	5.7	--	5	--	--	5	TACO
1,3-Dichlorobenzene	541-73-1	ug/L	--	--	--	--	--	6.3	6.3	IEPA PO
1,3-Dichloropropene (total)	10061-02-6	ug/L	--	--	--	1	--	--	1	TACO
1,4-Dichlorobenzene	106-46-7	ug/L	--	--	--	75	--	--	75	TACO
2,4,5-Trichlorophenol	95-95-4	ug/L	50	0.032	--	700	--	--	0.032	IEPA HTC
2,4,6-Trichlorophenol	88-06-2	ug/L	--	--	2.1	10	--	--	2.1	IEPA HNC
2,4-Dichlorophenol	120-83-2	ug/L	--	--	--	21	--	--	21	TACO
2,4-Dimethylphenol	105-67-9	ug/L	--	--	--	140	--	--	140	TACO
2,4-Dinitrophenol	51-28-5	ug/L	--	--	--	14	--	--	14	TACO
2,4-Dinitrotoluene	121-14-2	ug/L	--	2.6	--	0.02	--	--	0.02	TACO
2,6-Dinitrotoluene	606-20-2	ug/L	--	--	0.4	0.31	--	--	0.31	TACO
2-Butanone	78-93-3	ug/L	--	--	--	--	--	--	NA	NA
2-Chloronaphthalene	91-58-7	ug/L	--	--	--	--	560	--	560	NON-TACO
2-Chlorophenol	95-57-8	ug/L	--	--	--	35	--	--	35	TACO
2-Hexanone	591-78-6	ug/L	--	--	--	--	--	280	280	IEPA PO
2-Methylnaphthalene	91-57-6	ug/L	--	--	--	--	--	63	63	IEPA PO
2-Methylphenol	95-48-7	ug/L	--	--	--	350	--	--	350	TACO
3,3-Dichlorobenzidine	91-94-1	ug/L	--	--	0.025	20	--	--	0.025	IEPA HNC
4,4'-DDD	72-54-8	ug/L	--	--	0.00027	14	--	--	0.00027	IEPA HNC
4,4'-DDE	72-55-9	ug/L	--	--	0.00019	10	--	--	0.00019	IEPA HNC
4,4'-DDT	50-29-3	ug/L	--	--	0.00019	6	--	--	0.00019	IEPA HNC
4,6-Dinitro-2-Methylphenol	534-52-1	ug/L	--	--	--	--	0.7	--	0.7	NON-TACO
4-Chloroaniline	106-47-8	ug/L	--	--	--	28	--	--	28	TACO
4-Methyl-2-Pentanone	108-10-1	ug/L	--	--	--	--	--	--	NA	NA
4-Methylphenol	106-44-5	ug/L	--	--	--	--	35	--	35	NON-TACO
Acenaphthene	83-32-9	ug/L	--	--	--	420	--	--	420	TACO

Table E-3
Summary of Screening Toxicity Values for Groundwater Seep and Surface Water COPCs Screening

Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain
DePue, Illinois

Analyte	CAS Number	Units	USEPA [1]	IEPA Derived Water Quality Criteria [2,3]		TACO GROs [4]	Non-TACO GROs [5]	IEPA Provisional Objective GROs [6]	DePue Lake	DePue Lake
			MCLs	HTC	HNC	Class 1	Class 1	Class 1	Selected Screening Toxicity Value (SSTV)	SSTV Source
Acenaphthylene	208-96-8	ug/L	--	--	--	--	210	210	210	NON-TACO
Acetone	67-64-1	ug/L	--	--	--	6300	--	--	6300	TACO
Aldrin	309-00-2	ug/L	--	--	0.000046	14	--	--	0.000046	IEPA HNC
Alpha-BHC	319-84-6	ug/L	--	--	0.0042	0.11	--	--	0.0042	IEPA HNC
Aluminum	7429-90-5	mg/L	--	--	--	--	3.5	3.5	3.5	NON-TACO
Anthracene	120-12-7	ug/L	--	35000	--	2100	--	--	2100	TACO
Antimony	7440-36-0	mg/L	0.006	12	--	0.006	--	--	0.006	TACO
Arsenic	7440-38-2	mg/L	0.01	--	--	0.05	--	--	0.01	EPA MCL
Barium	7440-39-3	mg/L	2	--	--	2	--	--	2	TACO
Benzene	71-43-2	ug/L	5	--	--	5	--	--	5	TACO
Benzo(a)anthracene	56-55-3	ug/L	--	--	0.16	0.13	--	--	0.13	TACO
Benzo(a)pyrene	50-32-8	ug/L	0.2	--	0.016	0.2	--	--	0.016	IEPA HNC
Benzo(b)fluoranthene	205-99-2	ug/L	--	--	0.16	0.18	--	--	0.16	IEPA HNC
Benzo(g,h,i)perylene	191-24-2	ug/L	--	--	--	--	210	210	210	NON-TACO
Benzo(k)fluoranthene	207-08-9	ug/L	--	--	1.6	0.17	--	--	0.17	TACO
Beryllium	7440-41-7	mg/L	0.004	--	--	0.004	--	--	0.004	TACO
bis-(2-Chloroethyl)ether	111-44-4	ug/L	--	--	0.42	10	--	--	0.42	IEPA HNC
bis-(2-Ethylhexyl)phthalate	117-81-7	ug/L	--	--	1.9	6	--	--	1.9	IEPA HNC
Bromodichloromethane	75-27-4	ug/L	--	--	13	0.2	--	--	0.2	TACO
Bromoform	75-25-2	ug/L	--	--	50	1	--	--	1	TACO
Bromomethane	74-83-9	ug/L	--	--	--	9.8	--	--	9.8	TACO
Butylbenzylphthalate	85-68-7	ug/L	--	1700	--	1400	--	--	1400	TACO
Cadmium	7440-43-9	mg/L	0.005	--	--	0.005	--	--	0.005	TACO
Carbon Disulfide	75-15-0	ug/L	--	--	--	700	--	--	700	TACO
Carbon Tetrachloride	56-23-5	ug/L	5	--	1.4	5	--	--	1.4	IEPA HNC
Chlordane	57-74-9	ug/L	2	--	0.72	2	--	--	0.72	IEPA HNC
Chloride	16887-00-6	mg/L	--	--	--	200	--	--	200	TACO
Chlorobenzene	108-90-7	ug/L	100	4500	--	100	--	--	100	TACO
Chloroethane	75-00-3	ug/L	--	--	--	--	--	2800	2800	IEPA PO
Chloroform	67-66-3	ug/L	--	--	130	0.2	--	--	0.2	TACO
Chloromethane	74-87-3	ug/L	--	--	--	--	--	2800	2800	IEPA PO
Chromium	7440-47-3	mg/L	0.1	--	--	0.1	--	--	0.1	TACO
Chrysene	218-01-9	ug/L	--	--	16	1.5	--	--	1.5	TACO
Cobalt	7440-48-4	mg/L	--	--	--	1	--	--	1	TACO
Copper	7440-50-8	mg/L	1.3	--	--	0.65	--	--	0.65	TACO

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Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain
DePue, Illinois

Analyte	CAS Number	Units	USEPA [1]	IEPA Derived Water Quality Criteria [2,3]		TACO GROs [4]	Non-TACO GROs [5]	IEPA Provisional Objective GROs [6]	DePue Lake	DePue Lake
			MCLs	HTC	HNC	Class 1	Class 1	Class 1	Selected Screening Toxicity Value (SSTV)	SSTV Source
Cyanide	57-12-5	mg/L	0.2	--	--	0.2	--	--	0.2	TACO
Dibenz(a,h)anthracene	53-70-3	ug/L	--	--	0.016	0.3	--	--	0.016	IEPA HNC
Dibenzofuran	132-64-9	ug/L	--	--	--	--	--	28	28	IEPA PO
Dibromochloromethane	124-48-1	ug/L	--	--	9.8	140	--	--	9.8	IEPA HNC
Dieldrin	60-57-1	ug/L	--	--	0.000046	9	--	--	0.000046	IEPA HNC
Diethylphthalate	84-66-2	ug/L	--	--	--	5600	--	--	5600	TACO
Dimethylphthalate	131-11-3	ug/L	--	--	--	--	--	70000	70000	IEPA PO
Di-n-butylphthalate	84-74-2	ug/L	--	--	--	700	--	--	700	TACO
Di-n-octylphthalate	117-84-0	ug/L	--	--	--	140	--	--	140	TACO
Endosulfan	115-29-7	ug/L	--	--	--	42	--	--	42	TACO
Endrin	72-20-8	ug/L	2	--	--	2	--	--	2	TACO
Ethylbenzene	100-41-4	ug/L	700	--	--	700	--	--	700	TACO
Fluoranthene	206-44-0	ug/L	--	120	--	280	--	--	120	IEPA HTC
Fluorene	86-73-7	ug/L	--	0.0045	--	280	--	--	0.0045	IEPA HTC
Fluoride	16984-48-8	mg/L	4	--	--	4	--	--	4	TACO
gamma-BHC (Lindane)	58-89-9	ug/L	0.2	--	0.02	0.2	--	--	0.02	IEPA HNC
Heptachlor	76-44-8	ug/L	0.4	--	0.000068	0.04	--	--	0.000068	IEPA HNC
Heptachlor epoxide	1024-57-3	ug/L	0.2	--	0.000036	0.2	--	--	0.000036	IEPA HNC
Hexachlorobenzene	118-74-1	ug/L	1	--	0.00025	0.06	--	--	0.00025	IEPA HNC
Hexachlorobutadiene	87-68-3	ug/L	--	--	--	--	7	--	7	NON-TACO
Hexachlorocyclopentadiene	77-47-4	ug/L	50	--	--	50	--	--	50	TACO
Hexachloroethane	67-72-1	ug/L	--	--	2.9	7	--	--	2.9	IEPA HNC
Indeno(1,2,3-cd)pyrene	193-39-5	ug/L	--	--	0.16	0.43	--	--	0.16	IEPA HNC
Iron	7439-89-6	mg/L	--	--	--	5	--	--	5	TACO
Isophorone	78-59-1	ug/L	--	--	760	1400	--	--	760	IEPA HNC
Lead	7439-92-1	mg/L	0.015	--	--	0.0075	--	--	0.0075	TACO
Manganese	7439-96-5	mg/L	--	--	--	0.15	--	--	0.15	TACO
Mercury	7439-97-6	mg/L	0.002	--	--	0.002	--	--	0.002	TACO
Methoxychlor	72-43-5	ug/L	40	--	--	40	--	--	40	TACO
Methylene Chloride	75-09-2	ug/L	--	--	330	5	--	--	5	TACO
Naphthalene	91-20-3	ug/L	--	--	--	140	--	--	140	TACO
Nickel	7440-02-0	mg/L	--	--	--	0.1	--	--	0.1	TACO
Nitrate as N	14797-55-8	mg/L	10	--	--	10	--	--	10	TACO
Nitrite as N [7]	14797-65-0	mg/L	1	--	--	--	--	--	3.7	EPA RSL
Nitrobenzene	98-95-3	ug/L	--	530	--	3.5	--	--	3.5	TACO

Table E-3
Summary of Screening Toxicity Values for Groundwater Seep and Surface Water COPCs Screening

Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain
DePue, Illinois

Analyte	CAS Number	Units	USEPA [1]	IEPA Derived Water Quality Criteria [2,3]		TACO GROs [4]	Non-TACO GROs [5]	IEPA Provisional Objective GROs [6]	DePue Lake	DePue Lake
			MCLs	HTC	HNC	Class 1	Class 1	Class 1	Selected Screening Toxicity Value (SSTV)	SSTV Source
N-Nitroso-di-n-propylamine	621-64-7	ug/L	--	--	--	3.2	--	--	3.2	TACO
N-Nitrosodiphenylamine	86-30-6	ug/L	--	--	--	1.8	--	--	1.8	TACO
PCBs (total)	1336-36-3	ug/L	0.0000005	--	0.000015	0.5	--	--	0.0000005	EPA MCL
Pentachlorophenol	87-86-5	ug/L	1	--	2.5	1	--	--	1	TACO
Phenanthrene	85-01-8	ug/L	--	--	--	--	210	--	210	NON-TACO
Phenol	108-95-2	ug/L	--	--	--	100	--	--	100	TACO
Pyrene	129-00-0	ug/L	--	3500	--	210	--	--	210	TACO
Selenium	7782-49-2	mg/L	0.05	--	--	0.05	--	--	0.05	TACO
Silver	7440-22-4	mg/L	--	--	--	0.05	--	--	0.05	TACO
Styrene	100-42-5	ug/L	100	--	--	100	--	--	100	TACO
Sulfate	14808-79-8	mg/L	--	--	--	400	--	--	400	TACO
Tetrachloroethene	127-18-4	ug/L	5	--	--	5	--	--	5	TACO
Thallium	7440-28-0	mg/L	0.002	0.003	--	0.002	--	--	0.002	TACO
Toluene	108-88-3	ug/L	1000	--	--	1000	--	--	1000	TACO
Toxaphene	8001-35-2	ug/L	3	--	0.00024	1000	--	--	0.00024	IEPA HNC
Trichloroethene	79-01-6	ug/L	5	--	--	5	--	--	5	TACO
Vanadium	7440-62-2	mg/L	--	--	--	0.049	--	--	0.049	TACO
Vinyl Chloride	75-01-4	ug/L	2	--	1.5	2	--	--	1.5	IEPA HNC
Xylene (Total)	1330-20-7	ug/L	10000	--	--	10000	--	--	10000	TACO
Zinc	7440-66-6	mg/L	--	--	--	5	--	--	5	TACO

Notes:

1. USEPA Maximum Contaminant Levels (MCLs) National Primary Drinking Water Regulations (USEPA, 2009b)
2. IEPA Derived Water Quality Criteria: Human Threshhold Criteria (HTC) (IEPA, 2009)
3. IEPA Derived Water Quality Criteria: Human Nonthreshhold Criteria (HNC) (IEPA, 2009)
4. Part 742 TACO Tier 1 Groundwater Remediation Objectives (Class 1) (IEPA 2007a)
5. Non-TACO Groundwater Remediation Objectives (GROs) Class 1 (IEPA, 2007b)
6. IEPA Provisional Objectives provided to Serese Marotta, Groundwater Objectives (IEPA, 2004)
7. The tapwater RSL for nitrite (3.7 mg/L) was considered in lieu of IEPA values that were not available.

RSL = Regional Screening Level for tap water
NA = Not available

Table E-4
Summary of Screening Toxicity Values for Fish Fillet COPCs Screening

Baseline Human Health Risk Assessment, Operable Unit 5
DePue Lake Sediments and Floodplain
DePue, Illinois

Constituent	CAS number	units	USEPA RSL Fish Ingestion [1]	DePue Lake Selected Screening Toxicity Value
Aluminum	7429-90-5	mg/kg	1350	1350
Antimony	7440-36-0	mg/kg	0.541	0.541
Arsenic	7440-38-2	mg/kg	0.406	0.406
Barium	7440-39-3	mg/kg	270	270
Beryllium	7440-41-7	mg/kg	2.7	2.7
Cadmium	7440-43-9	mg/kg	1.35	1.35
Chromium	7440-47-3	mg/kg	4.06	4.06
Copper	7440-50-8	mg/kg	54.1	54.1
Iron	7439-89-6	mg/kg	946	946
Manganese	7439-96-5	mg/kg	189	189
Mercury	7439-97-6	mg/kg	0.216	0.216
Nickel	7440-02-0	mg/kg	27	27
Selenium	7782-49-2	mg/kg	6.76	6.76
Silver	7440-22-4	mg/kg	6.76	6.76
Thallium	7440-28-0	mg/kg	NA	NA
Vanadium	7440-62-2	mg/kg	0.0946	0.0946
Zinc	7440-66-6	mg/kg	406	406

Notes:
1. USEPA Regional Screening Levels Fish Ingestion SOURCE: USEPA (2009a)

Table D-1

Summary of Parameter Values Used in the Adult Lead Model (ALM) for Evaluation of Non-Residential Lead Risks Associated with Exposure to Soils

OU5 Human Health Risk Assessment
Operable Unit 5 (DePue Lake Sediments and Floodplain)
DePue, Illinois

Exposure Variable	Description	Units	Adolescent Trespasser - Floodplain Area 1B [1]	Adolescent Trespasser - Floodplain Area 1C [1]	Adolescent Trespasser - Floodplain Area 2 [1]	Utility Maintenance Worker - Floodplain Area 1B [2]
PbS	Average lead concentration in soil [3]	ppm	1,903	302	60	1,590
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	1.0 [a]	1.0 [a]	1.0 [a]	0.9 [a]
BKSF	Biokinetic slope factor	µg/dL per µg/day	0.4 [a]	0.4 [a]	0.4 [a]	0.4 [a]
GSD_i	Geometric standard deviation PbB	--	1.8 [b]	1.8 [b]	1.8 [b]	1.8 [b]
PbB_0	Baseline PbB	µg/dL	1.0 [b]	1.0 [b]	1.0 [b]	1.0 [b]
$IR_{S,D}$	Soil ingestion rate (including soil-derived indoor dust)	g/day	0.050 [a]	0.050 [a]	0.050 [a]	0.10 [c]
$AF_{S,D}$	Absorption fraction, Pb in soil and dust	--	0.12 [a]	0.12 [a]	0.12 [a]	0.12 [a]
$EF_{S,D}$	Exposure frequency, Pb pathway	days/yr	28 [d,f]	28 [d,f]	28 [d,f]	12 [e]
$AT_{S,D}$	Averaging time, Pb pathway	days/yr	196 [g]	196 [g]	196 [g]	84 [h]

Notes:

[1] Exposure medium is surface soil (0 - 0.5 feet bgs).

[2] Exposure medium is surface and subsurface soil (0 - 2 feet bgs).

[3] Consistent with the ALM guidance (USEPA, 2003a; 2008), the arithmetic mean of lead concentrations was used in the ALM.

[4] Consistent with USEPA (2003a; 2004; 2008) guidance, dermal exposures to lead in aqueous and non-aqueous media were not quantitatively evaluated with the ALM due to the uncertainty in assigning a dermal absorption fraction that would apply to the numerous inorganic forms of lead that are typically found in environmental settings.

[a] Default value (USEPA, 2003a).

[b] Updated default central tendency estimate (CTE) for all U.S. populations (USEPA, 2009).

[c] Default CTE value for soil ingestion for contact-intensive adult scenarios (USEPA, 2008).

[d] Exposure frequency represents 1 day per week for 7 months, April - October (1 day/week x 28 weeks = 28 days/year).

[e] Exposure frequency is based on professional judgment. Due to the limited number of utilities in the area, these receptors are not expected to be onsite more than a few days per year, but the ALM cannot be used for exposures less than 90 days (3 months). Therefore, a hypothetical EF of 12 days/year (1 day/week for 12 weeks) is used as a surrogate for this receptor, although exposures are expected to be less.

[f] Exposure frequency is the same value used to quantify potential exposures for other chemicals in the HHRA.

[g] Averaging time is based on EF to avoid diluting exposures over the entire year (7 days per week x 28 weeks/year = 196 days/year) (USEPA, 2003b).

[h] Averaging time is based on EF to avoid diluting exposures over the entire year (7 days per week x 12 weeks/year = 84 days/year) (USEPA, 2003b).

µg/dL = micrograms per deciliter

g/day = grams per day

ppm = parts per million

bgs = below ground surface

References:

USEPA. 2003a. Recommendations of the Technical Review Workgroup for Lead for an Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil. EPA-540-R-03-001. January 2003.

USEPA. 2003b. Assessing Intermittent or Variable Exposures at Lead Sites. OSWER Directive #9285.7-76. EPA-540-R-03-008. November.

USEPA. 2004. Risk Assessment Guidance for Superfund, Part E, Supplemental Guidance for Dermal Risk Assessment. EPA/540/R/99/005. July 2004.

USEPA. 2008. Frequent Questions from Risk Assessors on the ALM. Accessed on-line 5/27/09 at http://www.epa.gov/superfund/health/contaminants/lead/almfaq.htm. Updated August 18.

USEPA. 2009. Update of the Adult Lead Methodology's Default Baseline Blood Lead Concentration and Geometric Standard Deviation Parameters. OSWER 9200.2-82. June 26.

Table D-2
Summary of Parameter Values Used in the Adult Lead Model (ALM) for Evaluation of Non-Residential Lead Risks Associated with Exposure to Sediment

OU5 Human Health Risk Assessment
Operable Unit 5 (DePue Lake Sediments and Floodplain)
DePue, Illinois

Exposure Variable	Description	Units	Shoreline Angler (Adult) - Sediment Area 1A [1]	Boat Angler (Adult) - Lake-Wide [1]	Adolescent Trespasser - Floodplain Area 1B [2]	Boater (Adult) - Lake-Wide [1]	Utility Maintenance Worker - Floodplain/Sediment Area 1B [2,3]	Village Park Maintenance Worker- Sediment Area 1A [3]	Village Park Recreational User (Adult) - Sediment Area 1A [1]
PbS	Average lead concentration in sediment [4]	ppm	271	318	316	318	2,030 [k]	237	271
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	0.9 [a]	0.9 [a]	1.0 [a]	0.9 [a]	0.9 [a]	0.9 [a]	0.9 [a]
BKSF	Biokinetic slope factor	µg/dL per µg/day	0.4 [a]	0.4 [a]	0.4 [a]	0.4 [a]	0.4 [a]	0.4 [a]	0.4 [a]
GSD_i	Geometric standard deviation PbB	--	1.8 [b]	1.8 [b]	1.8 [b]	1.8 [b]	1.8 [b]	1.8 [b]	1.8 [b]
PbB_0	Baseline PbB	µg/dL	1.0 [b]	1.0 [b]	1.0 [b]	1.0 [b]	1.0 [b]	1.0 [b]	1.0 [b]
$IR_{S,D}$	Sediment ingestion rate	g/day	0.050 [a]	0.050 [a]	0.050 [a]	0.050 [a]	0.050 [a]	0.050 [a]	0.050 [a]
$AF_{S,D}$	Absorption fraction, Pb in sediment	--	0.12 [a]	0.12 [a]	0.12 [a]	0.12 [a]	0.12 [a]	0.12 [a]	0.12 [a]
$EF_{S,D}$	Exposure frequency, Pb pathway	days/yr	20 [c,f]	20 [c,f]	28 [d,f]	13 [e,f]	12 [i]	28 [d,f]	28 [d,f]
$AT_{S,D}$	Averaging time, Pb pathway	days/yr	365 [a]	365 [a]	196 [g]	91 [h]	84 [j]	196 [g]	196 [g]

Notes:

[1] Exposure medium is surface sediment (0 - 0.5 feet bgs).
[2] Exposure medium is groundwater seep sediment.
[3] Exposure medium is surface and subsurface sediment (0 - 2 feet bgs).
[4] Consistent with the ALM guidance (USEPA, 2003a; 2008), the arithmetic mean of lead concentrations was used in the ALM.
[5] Consistent with USEPA (2003a; 2004; 2008) guidance, dermal exposures to lead in aqueous and non-aqueous media were not quantitatively evaluated with the ALM due to the uncertainty in assigning a dermal absorption fraction that would apply to the numerous inorganic forms of lead that are typically found in environmental settings.
[a] Default value (USEPA, 2003a).
[b] Updated default central tendency estimate (CTE) for all U.S. populations (USEPA, 2009).
[c] Average exposure frequency for anglers based on USFWS (2008) 2006 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation - Illinois.
[d] Exposure frequency represents 1 day per week for 7 months, April - October (1 day/week x 28 weeks = 28 days/year).
[e] Exposure frequency assumes 1 day per week for 13 weeks of summer.
[f] Exposure frequency is the same value used to quantify potential exposures for other chemicals in the HHRA.
[g] Averaging time is based on EF to avoid diluting exposures over the entire year (7 days per week x 28 weeks/year = 196 days/year) (USEPA, 2003b).
[h] Averaging time is based on EF to avoid diluting exposures over the entire year (7 days per week x 13 weeks/year = 91 days/year) (USEPA, 2003b).
[i] Exposure frequency is based on professional judgment. Due to the limited number of utilities in the area, these receptors are not expected to be onsite more than a few days per year, but the ALM cannot be used for exposures less than 90 days (3 months). Therefore, a hypothetical EF of 12 days/year (1 day/week for 12 weeks) is used as a surrogate for this receptor, although exposures are expected to be less.
[j] Averaging time is based on EF to avoid diluting exposures over the entire year (7 days per week x 12 weeks/year = 84 days/year) (USEPA, 2003b).
[k] Represents arithmetic mean of lake sediment data for Sediment Area 1B and groundwater seep sediment data from Floodplain Area 1B.
µg/dL = micrograms per deciliter
g/day = grams per day
ppm = parts per million
bgs = below ground surface

References:

USEPA. 2003a. Recommendations of the Technical Review Workgroup for Lead for an Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil. EPA-540-R-03-001. January 2003.
USEPA. 2003b. Assessing Intermittent or Variable Exposures at Lead Sites. OSWER Directive #9285.7-76. EPA-540-R-03-008. November.
USEPA. 2004. Risk Assessment Guidance for Superfund, Part E, Supplemental Guidance for Dermal Risk Assessment. EPA/540/R/99/005. July 2004.
USEPA. 2008. Frequent Questions from Risk Assessors on the ALM. Accessed on-line 5/27/09 at http://www.epa.gov/superfund/health/contaminants/lead/almfaq.htm. Updated August 18, 2008.
USEPA. 2009. Update of the Adult Lead Methodology's Default Baseline Blood Lead Concentration and Geometric Standard Deviation Parameters. OSWER 9200.2-82. June 26.

Table D-3
Summary of Parameter Values Used in the Adult Lead Model (ALM) for Evaluation of Non-Residential Lead Risks Associated with Exposure to Surface Water

OU5 Human Health Risk Assessment
Operable Unit 5 (DePue Lake Sediments and Floodplain)
DePue, Illinois

Exposure Variable	Description	Units	Shoreline Angler (Adult) - Eastern Lake [1]	Boat Angler (Adult) - Lake-Wide [1]	Adolescent Trespasser - Floodplain Area 1B [2]	Adolescent Trespasser - Floodplain Area 1C [2]	Boater (Adult) - Lake-Wide	Utility Maintenance Worker - Eastern Lake/Floodplain Area 1B [1,2]	Village Park Maintenance Worker - Eastern Lake [1]	Village Park Recreational User (Adult) - Eastern Lake [1]
PbS	Lead concentration in surface water [3]	mg/L	0.02	0.017	0.0147	0.0171	0.017	0.0189 [l]	0.02	0.02
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	0.9 [a]	0.9 [a]	1.0 [a]	1.0 [a]	0.9 [a]	0.9 [a]	0.9 [a]	0.9 [a]
BKSF	Biokinetic Slope Factor	µg/dL per µg/day	0.4 [a]	0.4 [a]	0.4 [a]	0.4 [a]	0.4 [a]	0.4 [a]	0.4 [a]	0.4 [a]
GSD_i	Geometric standard deviation PbB	--	1.8 [b]	1.8 [b]	1.8 [b]	1.8 [b]	1.8 [b]	1.8 [b]	1.8 [b]	1.8 [b]
PbB_0	Baseline PbB	µg/dL	1.0 [b]	1.0 [b]	1.0 [b]	1.0 [b]	1.0 [b]	1.0 [b]	1.0 [b]	1.0 [b]
IR	Surface water ingestion rate	mL/day	10 [c]	10 [c]	10 [c]	10 [c]	10 [c]	10 [c]	10 [c]	10 [c]
AF	Absorption fraction	--	0.20 [a]	0.20 [a]	0.20 [a]	0.20 [a]	0.20 [a]	0.20 [a]	0.20 [a]	0.20 [a]
EF	Exposure frequency, Pb pathway	days/yr	20 [d,e]	20 [d,e]	28 [e,f]	28 [e,f]	13 [e,h]	12 [j]	28 [e,f]	28 [e,f]
AT	Averaging time, Pb pathway	days/yr	365 [a]	365 [a]	196 [g]	196 [g]	91 [i]	84 [k]	196 [g]	196 [g]

Notes:

[1] Exposure medium is lake surface water.

[2] Exposure medium is groundwater seep surface water.

[3] Lead concentrations represent arithmetic means.

[4] Consistent with USEPA (2003; 2004; 2008) guidance, dermal exposures to lead in aqueous and non-aqueous media were not quantitatively evaluated with the ALM due to the uncertainty in assigning a dermal absorption fraction that would apply to the numerous inorganic forms of lead that are typically found in environmental settings.

[a] Default value (USEPA, 2003a).

[b] Updated default central tendency estimate (CTE) for all U.S. populations (USEPA, 2009).

[c] IEPA's Part 302, Water Quality Standards value for incidental ingestion of surface water is 0.01 liters per hour. Assuming 1 hour of exposure per event, the daily intake rate is 0.01 liters per day, which equates to 10 grams per day (1 L = 1000 g).

[d] Average exposure frequency for anglers based on USFWS (2008) 2006 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation - Illinois.

[e] Exposure frequency is the same value used to quantify potential exposures for other chemicals in the HHRA.

[f] Exposure frequency represents 1 day per week for 7 months, April - October (1 day/week x 28 weeks = 28 days/year).

[g] Averaging time is based on EF to avoid diluting exposures over the entire year (7 days per week x 28 weeks/year = 196 days/year) (USEPA, 2003b).

[h] Exposure frequency assumes 1 day per week for 13 weeks of summer.

[i] Averaging time is based on EF to avoid diluting exposures over the entire year (7 days per week x 13 weeks/year = 91 days/year) (USEPA, 2003b).

[j] Exposure frequency is based on professional judgment. Due to the limited number of utilities in the area, these receptors are not expected to be onsite more than a few days per year, but the ALM cannot be used for exposures less than 90 days (3 months). Therefore, a hypothetical EF of 12 days/year (1 day/week for 12 weeks) is used as a surrogate for this receptor, although exposures are expected to be less.

[k] Averaging time is based on EF to avoid diluting exposures over the entire year (7 days per week x 12 weeks/year = 84 days/year) (USEPA, 2003b).

[l] Represents arithmetic mean of eastern lake surface water and groundwater seep surface water from Floodplain Area 1B.

µg/dL = micrograms per deciliter

L/day = liters per day

mg/L = milligrams per liter

bgs = below ground surface

NA = not applicable

References:

USEPA. 2003a. Recommendations of the Technical Review Workgroup for Lead for an Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil. EPA-540-R-03-001. January 2003.

USEPA. 2003b. Assessing Intermittent or Variable Exposures at Lead Sites. OSWER Directive #9285.7-76. EPA-540-R-03-008. November.

USEPA. 2004. Risk Assessment Guidance for Superfund, Part E, Supplemental Guidance for Dermal Risk Assessment. EPA/540/R/99/005. July 2004.

USEPA. 2008. Frequent Questions from Risk Assessors on the ALM. Accessed on-line 5/27/09 at http://www.epa.gov/superfund/health/contaminants/lead/almfaq.htm. Updated August 18, 2008.

USEPA. 2009. Update of the Adult Lead Methodology's Default Baseline Blood Lead Concentration and Geometric Standard Deviation Parameters. OSWER 9200.2-82. June 26.

Table D-4

Summary of Parameter Values Used in the Adult Lead Model (ALM) for Evaluation of Lead Risks Associated with Consumption of Fish

OU5 Human Health Risk Assessment

Operable Unit 5 (DePue Lake Sediments and Floodplain)

DePue, Illinois

Exposure Variable	Description	Units	Shoreline Angler (Adult)	Boat Angler (Adult)
PbF	Lead concentration in fish [1]	µg/g	0.179	0.179
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	0.9 [a]	0.9 [a]
BKSF	Biokinetic Slope Factor	µg/dL per µg/day	0.4 [a]	0.4 [a]
GSD_i	Geometric standard deviation PbB	--	1.8 [b]	1.8 [b]
PbB_0	Baseline PbB	µg/dL	1.0 [b]	1.0 [b]
IR	Fish consumption rate	g/day	8 [c]	8 [c]
AF	Absorption fraction	--	0.12 [a]	0.12 [a]
EF	Exposure frequency, Pb pathway	days/yr	365 [d]	365 [d]
AT	Averaging time, Pb pathway	days/yr	365 [a]	365 [a]

Notes:

[1] Lead concentration represents arithmetic mean of site-wide fillet data.

[a] Default value (USEPA, 2003; 2011).

[b] Updated default central tendency estimate (CTE) for all U.S. populations (USEPA, 2009).

[c] Central tendency fish consumption rate presented in Table 4.4 of the HHRA. Represents value for recreational freshwater anglers from USEPA (1997) Exposure Factors Handbook.

[d] Exposure frequency is set at 365 days per year to account for the daily fish consumption rate.

µg/g = micrograms per gram

µg/dL = micrograms per deciliter

g/day = grams per day

References:

USEPA. 2003. Recommendations of the Technical Review Workgroup for Lead for an Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil. EPA-540-R-03-001. January 2003.

USEPA. 2009. Update of the Adult Lead Methodology's Default Baseline Blood Lead Concentration and Geometric Standard Deviation Parameters. OSWER 9200.2-82. June 26.

USEPA. 2011. Frequent Questions from Risk Assessors on the ALM. Accessed on-line 5/12/11 at http://www.epa.gov/superfund/health/contaminants/lead/almfaq.htm. Updated February 28, 2011.

Table D-5
IEUBK Model for Boat Angler and Boater (Child)

OU5 Human Health Risk Assessment
Operable Unit 5 (DePue Lake and Floodplains)
DePue, Illinois

LEAD MODEL FOR WINDOWS Version 1.1

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Model Version: 1.1 Build11
User Name: Serese Marotta
Date: 05/17/2011
Site Name: DePue Lake and Floodplains
Operable Unit: OU5
Run Mode: Site Risk Assessment

 # Soil/Dust Data

Average surface sediment concentration (lake-wide) and groundwater seep sediment for Floodplain Area 1B = 318 mg/kg.
No soil/dust exposure.

 # Alternate Source Data

Average surface water concentration, lake-wide = 0.0127 mg/L.
Surface water intake = 0.01 L/day, which equates to 12.7 ug/L x 0.01 L/day = 0.127 ug Pb/day.
Average fish fillet concentration, lake-wide = 0.179 ug/g.
Fish consumption rate = 4 grams/day, which equates to 0.179 ug/g x 4 g/day = 0.716 ug Pb/day.
0.127 + 0.716 = 0.843 ug Pb/day.

 # GI Values + Bioavailability Data

Alternate value for surface water and fish represents default of 50%.

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake (µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

Table D-5
IEUBK Model for Boat Angler and Boater (Child)

OU5 Human Health Risk Assessment
Operable Unit 5 (DePue Lake and Floodplains)
DePue, Illinois

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 4.000 µg Pb/L

****** Soil & Dust ******

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	318.000	0.000
1-2	318.000	0.000
2-3	318.000	0.000
3-4	318.000	0.000
4-5	318.000	0.000
5-6	318.000	0.000
6-7	318.000	0.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.843
1-2	0.843
2-3	0.843
3-4	0.843
4-5	0.843
5-6	0.843
6-7	0.843

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.064	0.397	0.377
1-2	0.034	0.916	0.394	0.935
2-3	0.062	1.005	0.398	0.981
3-4	0.067	0.970	0.401	1.008
4-5	0.067	0.941	0.407	1.061
5-6	0.093	0.994	0.409	1.125
6-7	0.093	1.080	0.410	1.148

Table D-5
IEUBK Model for Boat Angler and Boater (Child)

OU5 Human Health Risk Assessment
Operable Unit 5 (DePue Lake and Floodplains)
DePue, Illinois

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	3.436	5.295	2.9
1-2	5.419	7.698	3.2
2-3	5.467	7.912	3.0
3-4	5.512	7.958	2.8
4-5	4.142	6.617	2.3
5-6	3.748	6.370	2.0
6-7	3.550	6.281	1.8

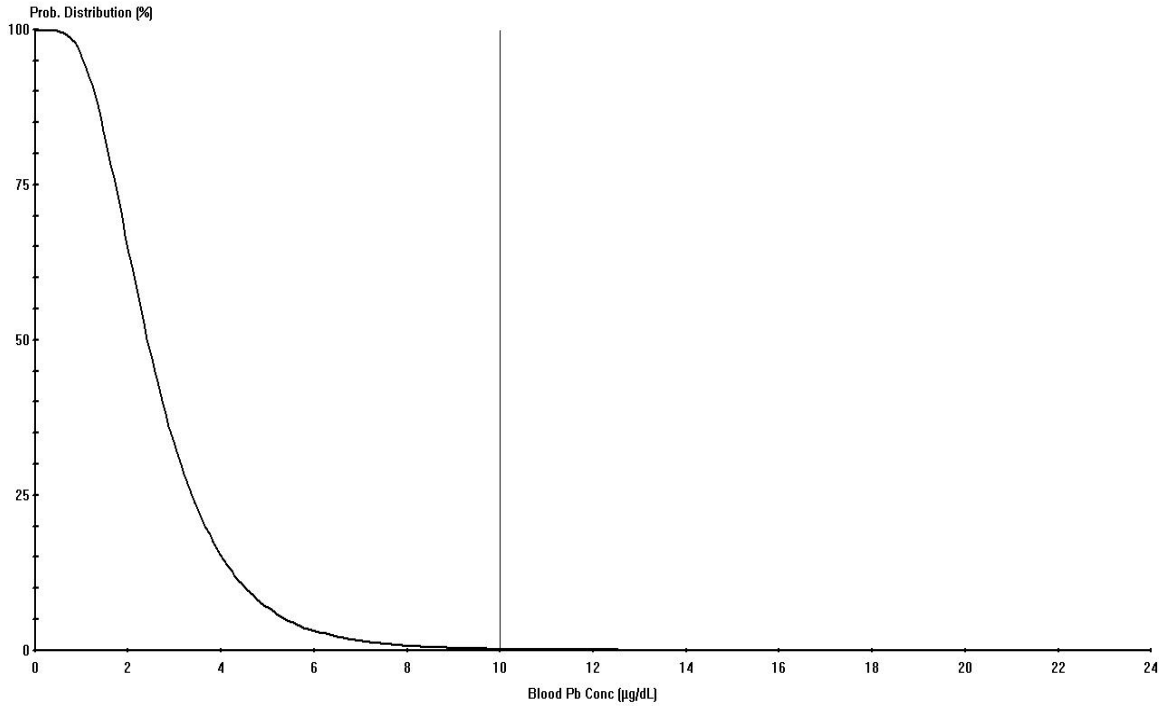

Table D-6
IEUBK Model for Shoreline Angler and Village Park Recreational User (Child)

OU5 Human Health Risk Assessment
Operable Unit 5 (DePue Lake and Floodplains)
DePue, Illinois

LEAD MODEL FOR WINDOWS Version 1.1

==========

Model Version: 1.1 Build11
User Name: Serese Marotta
Date: 05/17/2011
Site Name: DePue Lake and Floodplains
Operable Unit: OU5
Run Mode: Site Risk Assessment

 # Soil/Dust Data
Average sediment concentration, Floodplain Area 1A = 65.6 mg/kg.
No soil/dust exposure.
 # Alternate Source Data
Average surface water concentration, Eastern Lake = 0.02 mg/L.
Surface water intake = 0.01 L/day, which equates to 20 ug/L x 0.01 L/day = 0.2 ug Pb/day.
Average fish fillet concentration, lake-wide = 0.179 ug/g.
Fish consumption rate = 4 grams per day, which equates to 0.179 ug/g x 4 g/day = 0.716 ug Pb/day.
0.2 + 0.716 = 0.916 ug Pb/day.
 # GI Values + Bioavailability Data
Alternate value for fish and surface water represents default of 50%.

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake (µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

Table D-6
IEUBK Model for Shoreline Angler and Village Park Recreational User (Child)

OU5 Human Health Risk Assessment
Operable Unit 5 (DePue Lake and Floodplains)
DePue, Illinois

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 4.000 µg Pb/L

****** Soil & Dust ******

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	65.600	0.000
1-2	65.600	0.000
2-3	65.600	0.000
3-4	65.600	0.000
4-5	65.600	0.000
5-6	65.600	0.000
6-7	65.600	0.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.916
1-2	0.916
2-3	0.916
3-4	0.916
4-5	0.916
5-6	0.916
6-7	0.916

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.097	0.444	0.388
1-2	0.034	0.950	0.444	0.970
2-3	0.062	1.037	0.446	1.012
3-4	0.067	0.997	0.448	1.036
4-5	0.067	0.957	0.450	1.080
5-6	0.093	1.008	0.451	1.141
6-7	0.093	1.093	0.451	1.162

Table D-6
IEUBK Model for Shoreline Angler and Village Park Recreational User (Child)

OU5 Human Health Risk Assessment
Operable Unit 5 (DePue Lake and Floodplains)
DePue, Illinois

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	0.730	2.681	1.5
1-2	1.159	3.558	1.5
2-3	1.164	3.720	1.4
3-4	1.168	3.715	1.3
4-5	0.870	3.423	1.2
5-6	0.784	3.478	1.1
6-7	0.741	3.541	1.0

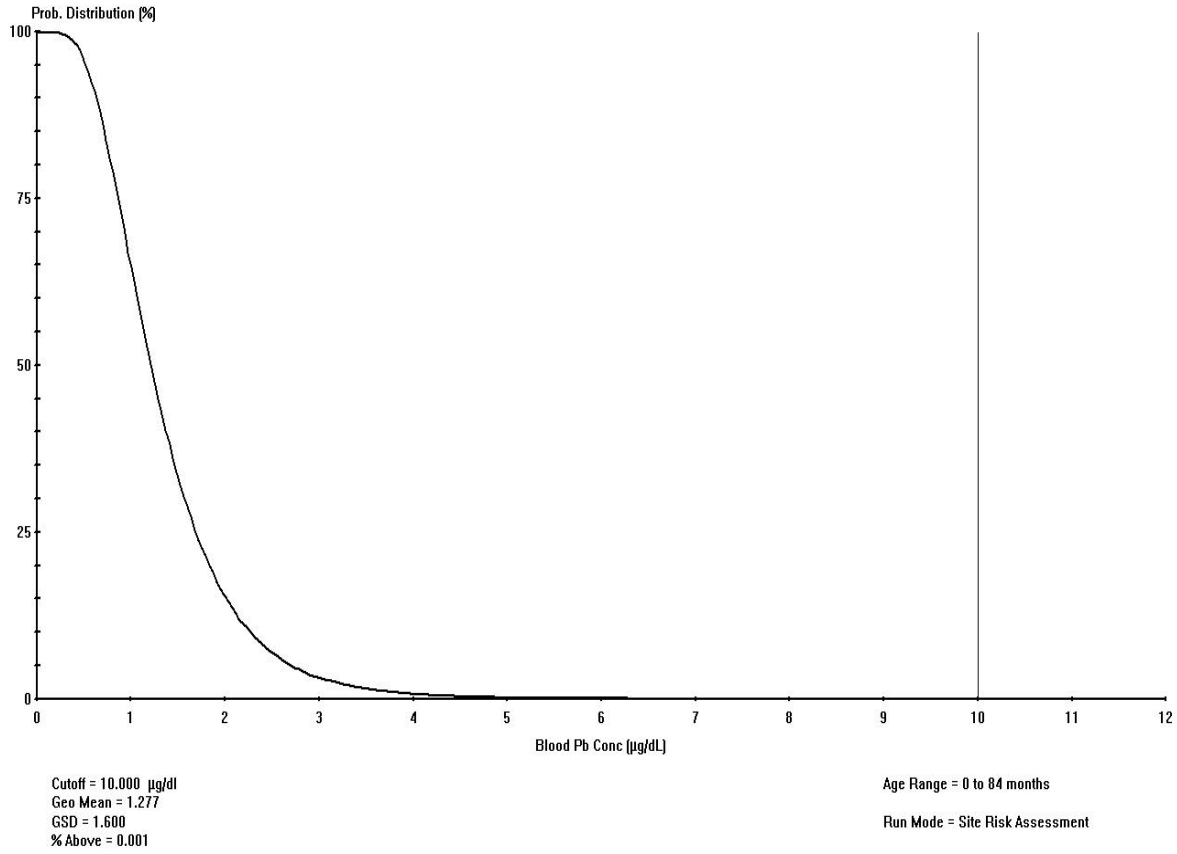

Table D-7
Calculation of Blood Lead Concentrations (PbBs) for Receptors Exposed to Soils
OU5 Human Health Risk Assessment

Operable Unit 5 (DePue Lake Sediments and Floodplain)
DePue, Illinois

Exposure Variable	Description of Exposure Variable	Units	Adolescent Trespasser - Floodplain Area 1B	Adolescent Trespasser - Floodplain Area 1C	Adolescent Trespasser - Floodplain Area 2	Utility Maintenance Worker - Floodplain Area 1B
PbS	Soil lead concentration	µg/g or ppm	1,903	302	60	1,590
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	1	1	1	0.9
BKSF	Biokinetic Slope Factor	µg/dL per µg/day	0.4	0.4	0.4	0.4
IR_S	Soil ingestion rate (including soil-derived indoor dust)	g/day	0.050	0.050	0.050	0.100
IR_{S+D}	Total ingestion rate of outdoor soil and indoor dust	g/day	--	--	--	--
W_S	Weighting factor; fraction of IR_{S+D} ingested as outdoor soil	--	--	--	--	--
K_{SD}	Mass fraction of soil in dust	--	--	--	--	--
$AF_{S,D}$	Absorption fraction (same for soil and dust)	--	0.12	0.12	0.12	0.12
$EF_{S,D}$	Exposure frequency (same for soil and dust)	days/yr	28	28	28	12
$AT_{S,D}$	Averaging time (same for soil and dust)	days/yr	196	196	196	84
PbB_{adult}	**PbB of adult/adolescent, geometric mean**	**µg/dL**	**0.7**	**0.1**	**0.02**	**1.1**

[1] Equation 1 does not apportion exposure between soil and dust ingestion (excludes W_S, K_{SD}).
When $IR_S = IR_{S+D}$ and $W_S = 1.0$, the equations yield the same $PbB_{fetal,0.95}$.

Notes:
ALM Version date 6/21/09
See Table D-1 for sources of exposure variables.

Source: U.S. EPA (1996). Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil

Table D-8
Calculation of Blood Lead Concentrations (PbBs) for Receptors Exposed to Sediment

OU5 Human Health Risk Assessment
Operable Unit 5 (DePue Lake Sediments and Floodplain)
DePue, Illinois

Exposure Variable	Description of Exposure Variable	Units	Shoreline Angler (Adult) - Sediment Area 1A	Boat Angler (Adult) - Lake-Wide	Adolescent Trespasser - Floodplain Area 1B	Boater (Adult) - Lake-Wide	Utility Maintenance Worker - Floodplain/Sediment Area 1B	Village Park Maintenance Worker - Sediment Area 1A	Village Park Recreational User (Adult) - Sediment Area 1A
PbS	Soil lead concentration	µg/g or ppm	271	318	316	318	2,030	237	271
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	0.9	0.9	1.0	0.9	0.9	0.9	0.9
BKSF	Biokinetic Slope Factor	µg/dL per µg/day	0.4	0.4	0.4	0.4	0.4	0.4	0.4
IR_S	Sediment ingestion rate	g/day	0.050	0.050	0.050	0.050	0.050	0.050	0.050
$AF_{S,D}$	Absorption fraction	--	0.12	0.12	0.12	0.12	0.12	0.12	0.12
$EF_{S,D}$	Exposure frequency	days/yr	20	20	28	13	12	28	28
$AT_{S,D}$	Averaging time	days/yr	365	365	196	91	84	196	196
PbB_{adult}	**PbB of adult/adolescent, geometric mean**	**µg/dL**	**0.04**	**0.04**	**0.1**	**0.1**	**0.7**	**0.1**	**0.1**

[1] Equation 1 does not apportion exposure between soil and dust ingestion (excludes W_S, K_{SD}).
When $IR_S = IR_{S+D}$ and $W_S = 1.0$, the equations yield the same $PbB_{fetal,0.95}$.

Notes:
ALM Version date 6/21/09
See Table D-2 for sources of exposure variables.

Source: U.S. EPA (1996). Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil

Table D-9
Calculation of Blood Lead Concentrations (PbBs) for Receptors Exposed to Surface Water

OU5 Human Health Risk Assessment
Operable Unit 5 (DePue Lake Sediments and Floodplain)
DePue, Illinois

Exposure Variable	Description of Exposure Variable	Units	Shoreline Angler (Adult) - Eastern Lake	Boat Angler (Adult) - Lake-Wide	Adolescent Trespasser - Floodplain Area 1B	Adolescent Trespasser - Floodplain Area 1C	Boater (Adult) - Lake-Wide	Utility Maintenance Worker - Eastern Lake/Floodplain Area 1B	Village Park Maintenance Worker - Eastern Lake	Village Park Recreational User (Adult) - Eastern Lake
PbS	Lead concentration in surface water	mg/L	0.02	0.017	0.0147	0.0171	0.017	0.0189	0.02	0.02
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	0.9	0.9	1.0	1.0	0.9	0.9	0.9	0.9
BKSF	Biokinetic Slope Factor	µg/dL per µg/day	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
IR	Surface water ingestion rate	mL/day	10	10	10	10	10	10	10	10
AF	Absorption fraction	--	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
EF	Exposure frequency	days/yr	20	20	28	28	13	12	28	28
AT	Averaging time	days/yr	365	365	196	196	91	84	196	196
PbB_{adult}	**PbB of adult worker, geometric mean**	**µg/dL**	**0.001**	**0.001**	**0.002**	**0.002**	**0.002**	**0.002**	**0.002**	**0.002**

[1] Equation 1 does not apportion exposure between soil and dust ingestion (excludes W_S, K_{SD}).
When $IR_S = IR_{S+D}$ and $W_S = 1.0$, the equations yield the same $PbB_{fetal,0.95}$.

Notes:
ALM Version date 6/21/09
See Table D-3 for sources of exposure variables.

Source: U.S. EPA (1996). Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil

Table D-10
Calculation of Blood Lead Concentrations (PbBs) for Receptors Exposed to Lead via Fish Consumption

OU5 Human Health Risk Assessment
Operable Unit 5 (DePue Lake Sediments and Floodplain)
DePue, Illinois

Exposure Variable	Description of Exposure Variable	Units	Shoreline Angler (Adult)	Boat Angler (Adult)
PbF	Lead concentration in fish	µg/g	0.179	0.179
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	0.9	0.9
BKSF	Biokinetic Slope Factor	µg/dL per µg/day	0.4	0.4
IR	Fish consumption rate	g/day	8	8
AF	Absorption fraction	--	0.12	0.12
EF	Exposure frequency	days/yr	365	365
AT	Averaging time	days/yr	365	365
PbB_{adult}	**PbB of adult worker, geometric mean**	**µg/dL**	**0.1**	**0.1**

Notes:
ALM Version date 6/21/09
See Table D-4 for sources of exposure variables.

Source: U.S. EPA (1996). Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil

Table D-11
Summary of Blood Lead Concentrations (PbBs) for Receptors Exposed to Lead

OU5 Human Health Risk Assessment
Operable Unit 5 (DePue Lake Sediments and Floodplain)
DePue, Illinois

Exposure Variable	Description of Exposure Variable	Units	Adolescent Trespasser - Floodplain Area 1B	Adolescent Trespasser - Floodplain Area 1C	Adolescent Trespasser - Floodplain Area 2	Utility Maintenance Worker - Floodplain/Sediment Area 1B
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	1	1	1	0.9
GSD_i	Geometric standard deviation PbB	--	1.8	1.8	1.8	1.8
PbB_0	Baseline PbB	µg/dL	1.0	1.0	1.0	1.0
PbB, adult, soil	PbB of adult worker, geometric mean, soil (Table D-7)	µg/dL	0.652	0.104	0.021	1.090
PbB, adult, sediment	PbB of adult worker, geometric mean, sediment (Table D-8)	µg/dL	0.108	--	--	0.696
PbB, adult, surface water	PbB of adult worker, geometric mean, surface water (Table D-9)	µg/dL	0.002	0.002	--	0.002
PbB, adult, fish	PbB of adult worker, geometric mean, fish (Table D-10)	µg/dL	--	--	--	--
PbB_{adult}	**PbB of adult worker, geometric mean (all pathways)**	**µg/dL**	**1.762**	**1.105**	**1.021**	**2.788**
$PbB_{fetal,\ 0.95}$	95th percentile PbB for adolescent or fetus of adult workers	µg/dL	4.6	2.9	2.7	6.6
PbB_t	Target PbB level of concern (e.g., 10 µg/dL)	µg/dL	10	10	10	10
$P(PbB_{fetal} > PbB_t)$	**Probability that PbB > PbB_t, assuming lognormal distribution**	**%**	**0.2%**	**0.009%**	**0.005%**	**0.9%**

Notes:
ALM Version date 6/21/09

Source: U.S. EPA (1996). Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil

Table D-11
Summary of Blood Lead Concentrations (PbBs) for Receptors Exposed to Lead

OU5 Human Health Risk Assessment
Operable Unit 5 (DePue Lake Sediments and Floodplain)
DePue, Illinois

Shoreline Angler (Adult) - Sediment Area 1A/Eastern Lake	Boat Angler (Adult) - Lake-Wide	Boater (Adult) - Lake-Wide	Village Park Maintenance Worker - Sediment Area 1A/Eastern Lake	Village Park Recreational User (Adult) - Sediment Area 1A/Eastern Lake
0.9	0.9	0.9	0.9	0.9
1.8	1.8	1.8	1.8	1.8
1.0	1.0	1.0	1.0	1.0
--	--	--	--	--
0.036	0.042	0.109	0.081	0.093
0.001	0.001	0.002	0.002	0.002
0.069	0.069	--	--	--
1.105	**1.111**	**1.111**	**1.084**	**1.095**
2.6	2.6	2.6	2.6	2.6
10	10	10	10	10
0.004%	**0.004%**	**0.004%**	**0.004%**	**0.004%**

Table C-1
Summary of Identified Outliers in Soil and Sediment

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Receptor	Subarea	Risk Driver	Frequency of Detection	Total Number of Suspected Outliers[1,2]	Distribution[1, 3]	Statistical Outlier Test[1,4]	Total Number of Statistical Outliers	Statistical Outliers[5]
Floodplain Surface and Subsurface Soil								
Utility Maintenance Worker	1B	Arsenic	24/24 (100%)	2	Ln	Dixon's Test	0	None
		Cadmium	24/24 (100%)	4	Ln/G	Dixon's Test	0	None
		Benzo(a)pyrene	3/6 (50%)	--	--	--	--	--
Wildlife Workers & Hunters	2	Arsenic	48/48 (100%)	4	Ln/G	Rosner's Test	3	LL5-3-0-0.5 (28.2)
								LL2-2-0.5-2.0 (23.7)
								LL5-3-0.5-2.0 (22.8)
Floodplain Surface Soil								
Trespasser	1B	Arsenic	10/10 (100%)	2	N	Dixon's Test	2	LL7-2-0-0.5 (72.8)
								LL7-1-0-0.5 (390)
		Cadmium	10/10 (100%)	1	Ln/G	Dixon's Test	0	None
Trespasser	1C	Arsenic	29/29 (100%)	3	NP	IQR Test	3	LL10-4-0-0.5 (34.4)
								LL9-2-0-0.5 (46)
								LL9-1-0-0.5 (49.3)
		Cadmium	29/29 (100%)	0	--	--	--	--
Trespasser	2	Arsenic	24/24 (100%)	2	N	Dixon's Test	2	LL2-2-0-0.5 (12.7)
								LL5-3-0-0.5 (28.2)
Trespasser	3	Benzo(a)pyrene	1/1 (100%)	--	--	--	--	--
Surficial and Subsurface Sediment								
Utility Maintenance Worker	1B	Arsenic	9/9 (100%)	1	N/G	Dixon's Test	0	None
		Cadmium	9/9 (100%)	0	--	--	--	--
Village Park Maintenance Worker	1A	Benzo(a)pyrene	8/8 (100%)	1	--	IQR Test[6]	1	SD-E 0-0.5 (3.4)
		Dibenz(a,h)anthracene	8/8 (100%)	1	--	IQR Test[6]	1	SD-E 0-0.5 (0.55)
		Arsenic	18/18 (100%)	1	N	Dixon's Test	1	SD-A 0-0.5 (23.2 [30.5])
		Mercury	15/18 (83.3%)	1	N/G/Ln	IQR Test	1	K1.5-1.0-2.0 (2.0)
Wildlife Workers & Hunters	2	Benzo(a)pyrene	11/11 (100%)	0	--	--	--	--
		Arsenic	118/118 (100%)	0	--	--	--	--
Surficial Sediment								
Angler (Boat)	Lake-wide	Benzo(a)pyrene	24/24 (100%)	1	N/G	Dixon's Test	1	SD-E 0-0.5 (3.4)
		Dibenz(a,h)anthracene	24/24 (100%)	1	N/G	Dixon's Test	1	SD-E 0-0.5 (0.55)
		Arsenic	83/83 (100%)	6	N	Rosner's Test	6	L1.5-0-0.5 (20.3)
								N.5-1-0-0.5 (29.6)
								P1-0-0.5 (73.1)
								SD-A 0-0.5 (23.2 [30.5])
								R1-0-0.5 (26.9)
								O1-0-0.5 (113)
		Cadmium	82/83 (98.8%)	7	Ln	Rosner's Test	0	None
Angler (Shoreline)	1A	Benzo(a)pyrene	6/6 (100%)	--	--	--	--	--
		Dibenz(a,h)anthracene	6/6 (100%)	--	--	--	--	--
		Arsenic	9/9 (100%)	0	--	--	--	--
Boater	Lake-wide	Benzo(a)pyrene	24/24 (100%)	1	N/G	Dixon's Test	1	SD-E 0-0.5 (3.4)
		Dibenz(a,h)anthracene	24/24 (100%)	1	N/G	Dixon's Test	1	SD-E 0-0.5 (0.55)
		Arsenic	83/83 (100%)	6	N	Rosner's Test	6	SD-A 0-0.5 (23.2 [30.5])
								P1-0-0.5 (73.1)
								N.5-1-0-0.5 (29.6)
								R1-0-0.5 (26.9)
								O1-0-0.5 (113)
								L1.5-0-0.5 (20.3)
		Cadmium	82/83 (98.8%)	7	Ln	Rosner's Test	0	None
Village Park Recreational User	1A	Benzo(a)pyrene	6/6 (100%)	--	--	--	--	--
		Arsenic	9/9 (100%)	0	--	--	--	--
		Cadmium	8/9 (88.9%)	1	N/Ln	Dixon's Test	1	SD-E 0-0.5 (113)

Table C-1
Summary of Identified Outliers in Soil and Sediment

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Receptor	Subarea	Risk Driver	Frequency of Detection	Total Number of Suspected Outliers[1,2]	Distribution[1, 3]	Statistical Outlier Test[1,4]	Total Number of Statistical Outliers	Statistical Outliers[5]
Groundwater Seep Sediment								
Angler (Boat)	Lake-wide	Arsenic	5/5 (100%)	--	--	--	--	--
		Cadmium	5/5 (100%)	--	--	--	--	--
Angler (Shoreline)	1A	Arsenic	3/3 (100%)	--	--	--	--	--
		Cadmium	3/3 (100%)	--	--	--	--	--
Boater	Lake-wide	Arsenic	5/5 (100%)	--	--	--	--	--
		Cadmium	5/5 (100%)	--	--	--	--	--
Trespasser	1B	Arsenic	6/6 (100%)	--	--	--	--	--
		Cadmium	6/6 (100%)	--	--	--	--	--
Utility Maintenance Worker	1B	Arsenic	6/6 (100%)	--	--	--	--	--
		Cadmium	6/6 (100%)	--	--	--	--	--
		Mercury	3/6 (50%)	--	--	--	--	--
Village Park Maintenance Worker	1A	Arsenic	3/3 (100%)	--	--	--	--	--
		Cadmium	3/3 (100%)	--	--	--	--	--
Village Park Recreational User	1A	Arsenic	3/3 (100%)	--	--	--	--	--
		Cadmium	3/3 (100%)	--	--	--	--	--

Abbreviations:
-- = not applicable
mg/kg = milligram per kilogram
IQR = interquartile range (75th - 25th percentiles)
Suspected Outliers = Values greater than 75th percentile + 3*IQR
Statistical Outliers = Suspected outliers confirmed through statistical testing.

Notes:
[1] Analyses conducted for analytes with at least 8 total observations and 5 detected observations (USEPA 2009a).
[2] Suspected outliers identified based on visual inspection of Q-Q plots and presence of values greater than 75th percentile + 3*IQR on box-plots.
[3] Distribution assessed by goodness-of-fit tests based on regression on order statistics (ROS) for the dataset excluding suspected outliers using ProUCL 4.0 at a 95% confidence level (α = 0.05).
Distributions:
Normal (N): data set follows a normal distribution, according to the Shapiro-Wilk test.
Gamma (G): data set follows a gamma distribution, according to the Kolmogorov-Smirnov test.
Lognormal (Ln): data set follows a lognormal distribution, according to the Shapiro-Wilk test.
Nonparametric (NP): data set does not follow any of the three distributions noted above
[4] Statistical test for confirming suspected outliers selected based on sample size, degree of censoring, and distribution of the dataset excluding suspected outliers:
Dixon's: n < 25, %ND < 15%, normal/lognormal
Rosner's: n ≥ 25, %ND < 15%, normal/lognormal
IQR: n < 60, %ND ≥ 15%, nonparametric/gamma/normal/lognormal
Walsh's: n ≥ 60, %ND ≥ 15%, nonparametric/gamma/normal/lognormal
No Test: final outliers based on the number of suspected outliers
[5] Sample ID and result concentration rounded to two-significant digits (provided in parentheses). Concentrations are reported in units of mg/kg.
[6] Statistical outliers identified using the IQR screening rule (i.e., the suspected outlier was greater than 75th percentile + 3*IQR).

References:
USEPA. 2009a. ProUCL Version 4.00.04 Technical Guide. Office of Research and Development. EPA/600/R-07/041. February.

Table B-1
HHRA Soil Sample Groups

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

	Trespasser				Utility Maintenance Worker	Wildlife Workers & Hunters	Farmers
Floodplain Exposure Area [1,2]	1B	1C	2	3	1B	2	2 / 3 [3]
Location ID							
LL1-1			X			X	
LL1-2			X			X	
LL1-3			X			X	
LL1-4			X			X	
LL2-1			X			X	
LL2-2			X			X	
LL3-1			X			X	
LL3-2			X			X	
LL3-3			X			X	
LL3-4			X			X	
LL4-1			X			X	
LL4-2			X			X	
LL4-3			X			X	
LL5-1			X		X [4]	X	
LL5-2			X		X [4]	X	
LL5-3			X		X [4]	X	
LL6-1	X				X		
LL6-2	X				X		
LL6-3	X				X		
LL7-1	X				X		
LL7-2	X				X		
LL7-3	X				X		
LL7-4	X				X		
LL8-1	X				X		
LL8-2	X				X		
LL8-3	X				X		
LL9-1		X					
LL9-2		X					
LL10-1		X					
LL10-2		X					
LL10-3		X					
LL10-4		X					
LL10-5		X					
LL11-1		X					
LL11-2		X					
LL11-3		X					
LL11-4		X					
LL11-5		X					
LL12-1		X					
LL12-2		X					
LL12-3		X					
LL12-4		X					
LL12-5		X					
LL13-1		X					
LL13-2		X					
LL13-3		X					
LL13-4		X					
LL14-1		X					
LL14-2		X					
LL14-3		X					
LL14-4		X					

Table B-1
HHRA Soil Sample Groups

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

	Trespasser				Utility Maintenance Worker	Wildlife Workers & Hunters	Farmers
Floodplain Exposure Area [1,2]	1B	1C	2	3	1B	2	2 / 3 [3]
Location ID							
LL15-1		X					
LL15-2		X					
LL15-3		X					
LL15-4		X					
LL16-1				X			
LL16-2				X [5]			
LL16-2A				X [5]			
LL16-2EA				X [5]			
LL16-2NA				X [5]			
LL16-2SA				X [5]			
LL16-2WA				X [5]			
LL16-3				X			
LL17-1				X			X
LL17-2				X			X
LL17-3				X			X
LL17-4				X			
LL17-5				X			
LL17-6				X			
LL17-7				X			
LL18-1				X			
LL18-2				X			
LL18-3				X			
LL18-4				X			X
LL19-1				X			
LL19-2				X			
LL19-3				X			
LL19-4				X			
LL19-5				X			
LL19-6				X			X
LL20-1			X			X	
LL20-2			X			X	
LL20-3			X			X	
LL20-4			X			X	
LL20-5			X			X	X
LL21-1			X			X	
LL21-2			X			X	
LL21-3			X			X	
Total No. of Sample Locations	10	29	24	25	13	24	6

Notes:

1. Floodplain exposure areas are identified as follows:
   FLOODPLAIN AREA 1A = North shore, adjacent to the Village.
   FLOODPLAIN AREA 1B = North shore, vicinity of Division Street Outfall.
   FLOODPLAIN AREA 1C = North shore, vicinity of South Ditch and Lowland Portion of the Southeast Area.
   FLOODPLAIN AREA 2 = Eastern portion of DePue Lake.
   FLOODPLAIN AREA 3 = Western portion of DePue Lake.
2. Potential exposure to soils in Floodplan Area 1A (adjacent to the Village Park) will be evalutated separately in the HHRA for OU4 (off-Site Soils)
3. Exposure area for farmers includes the combined agricultural portions of Floodplain Areas 2 and 3.
4. Potential exposure for Utility Maintenance Workers will be evaluated to also include the area adjacent to the DePue WWTP outfall.
5. Sample location LL16-2 was resampled for PAHs only; 4 other samples were also collected in the near vicinity.

Table B-2
HHRA Sediment Sample Groups

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

	Village Park Recreational User	Boater	Angler (Boat)	Angler (Shoreline)	Wildlife Workers & Hunters	Village Park Maintenance Worker	Utility Maintenance Worker
Sediment Exposure Area	1A	Lake-Wide	Lake-Wide	1A	2	1A	1B
Location ID							
C5		X	X		X		
C6		X	X		X		
D5		X	X		X		
D6		X	X		X		
D7		X	X		X		
D8		X	X		X		
D9		X	X		X		
E4		X	X		X		
E5		X	X		X		
E6		X	X		X		
E7		X	X		X		
E8		X	X		X		
E9		X	X		X		
F4		X	X		X		
F6		X	X		X		
F7		X	X		X		
F8		X	X		X		
F9		X	X		X		
G6		X	X		X		
G7		X	X		X		
G8		X	X		X		
G9		X	X		X		
H3		X	X		X		
H6		X	X		X		
H7		X	X		X		
H8		X	X		X		
I5		X	X		X		
I6		X	X		X		
I7		X	X		X		
J3		X	X		X		
J4		X	X		X		
J5		X	X		X		
J6		X	X		X		
K.5-1.5	X	X	X	X		X	
K.5-2		X	X		X		
K-1.5	X	X	X	X		X	
K2		X	X		X		
K3		X	X		X		
K4		X	X		X		
K5		X	X		X		
L.5-1.5	X	X	X	X		X	
L.5-2		X	X				
L-1.5	X	X	X	X		X	
L2		X	X		X		
L3		X	X		X		
M.5-1.5		X	X				
M.5-2		X	X				
M-1.5		X	X				
M2		X	X				
M3		X	X				

Table B-2
HHRA Sediment Sample Groups

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

	Village Park Recreational User	Boater	Angler (Boat)	Angler (Shoreline)	Wildlife Workers & Hunters	Village Park Maintenance Worker	Utility Maintenance Worker
Sediment Exposure Area	1A	Lake-Wide	Lake-Wide	1A	2	1A	1B
Location ID							
N.5-1		X	X				X
N.5-1.5		X	X				
N.5-2		X	X				
N-1.5		X	X				
N2		X	X				
N3		X	X				
O.5-1.5		X	X				
O.5-2		X	X				
O1		X	X				X
O1.5		X	X				
O2		X	X				
P.5-1		X	X				
P.5-1.5		X	X				
P.5-2		X	X				
P1		X	X				X
P1.5		X	X				
P2		X	X				
Q.5-1.5		X	X				
Q.5-2		X	X				
Q1		X	X				
Q1.5		X	X				
Q2		X	X				
R1		X	X				
R1.5		X	X				
R2		X	X				
S1		X	X				
S2		X	X				
T1		X	X				
SD-A	X	X	X	X		X	
SD-B	X	X	X	X		X	
SD-C	X	X	X	X		X	
SD-D	X	X	X	X		X	
SD-E	X	X	X	X		X	
Total No. of Sample Locations	9	83	83	9	40	9	3

Notes:

1. Sediment exposure areas are identified as follows:
   SEDIMENT AREA 1A = North shore, adjacent to the Village.
   SEDIMENT AREA 1B = North shore, vicinity of Division Street Outfall.
   SEDIMENT AREA 1C = North shore, vicinity of South Ditch and Lowland Portion of the Southeast Area.
   SEDIMENT AREA 2 = Eastern portion of DePue Lake.
   SEDIMENT AREA 3 = Western portion of DePue Lake.

Table B-3
HHRA Shoreline Seep Sample Groups

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

	Trespasser		Village Park Recreational User	Boater	Angler (boat)	Angler (shoreline)	Village Park Maintenance Worker	Utility Maintenance Worker
Floodplain Exposure Area [1]	1B	1C	1A			1A	1A	1B
Location ID								
SP-01			X	X	X	X	X	
SP-02			X	X	X	X	X	
SP-03			X	X	X	X	X	
SP-04	X							X
SP-05	X							X
SP-06	X							X
SP-07	X							X
SP-08	X							X
SP-09	X							X
SP-10		X						
N003		X						
N004		X						
N005		X						
Total No. of Sample Locations	6	4	3	3	3	3	3	6

Notes:

1. Floodplain exposure areas are identified as follows:
   FLOODPLAIN AREA 1A = North shore, adjacent to the Village.
   FLOODPLAIN AREA 1B = North shore, vicinity of Division Street Outfall.
   FLOODPLAIN AREA 1C = North shore, vicinity of South Ditch and Lowland Portion of the Southeast Area.
2. Shoreline seeps were not observed in Floodplain Exposure Areas 2 and 3.

Table B-4
HHRA Surface Water Sample Groups

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

	Village Park Recreational User	Boater	Angler (boat)	Angler (shoreline)	Village Park Maintenance Worker	Utility Maintenance Worker	Wildlife Workers and Hunters
Lake Exposure Area[1]	Eastern Lake	Lake-wide	Lake-wide	Eastern Lake	Eastern Lake	Eastern Lake	Lake-wide
Location ID							
SW-01-HI		X	X				X
SW-02-HI		X	X				X
SW-03-HI		X	X				X
SW-03-LO		X	X				X
SW-04-HI	X	X	X	X	X	X	X
SW-04-LO	X	X	X	X	X	X	X
SW-05-HI	X	X	X	X	X	X	X
SW-05-LO	X	X	X	X	X	X	X
SW-06-HI		X	X				X
SW-06-LO		X	X				X
SW-07-HI	X	X	X	X	X	X	X
SW-07-LO	X	X	X	X	X	X	X
SW-08-HI	X	X	X	X	X	X	X
SW-08-LO	X	X	X	X	X	X	X
SW-09-HI	X	X	X	X	X	X	X
SW-09-LO	X	X	X	X	X	X	X
SW-10-HI		X	X				X
SW-10-LO		X	X				X
Total No. of Sample Locations	10	18	18	10	10	10	18

Notes:

1. Lake exposure areas are identified as follows:
   Lake-wide = All Lake Surface water samples
   Eastern Lake = Eastern Lake Area (SW-4, SW-5, SW-7, SW-8, and SW-9)

Table B-5
DePue Lake Shoreline Seep Sediment TAL Metals Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval	Aluminum (mg/kg)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Calcium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Iron (mg/kg)
DePue Lake														
SP-01	10/9/2007	SP1-SD1	0-0.25	2,510	9.5 UJ	9.6 J	92	0.29 J	3.7	70,700	4.5	2.6 J	32 J	11,900
SP-02	10/9/2007	SP2-SD1	0-0.5	1,730	8.1 UJ	2.4 J	19 J	0.080 J	0.54 J	86,900	5.5	2.2 J	6.3 J	5,490
SP-03	10/9/2007	SP3-SD1	0-0.33	3,160	19 UJ	5.7 J	55 J	0.30 J	1.8	240,000	6.4	4.0 J	28 J	9,730
SP-04	10/9/2007	SP4-SD1	0-0.25	3,650	12 UJ	11 J	222	0.45 J	1,420	179,000	8.6	4.2 J	38 J	9,900
SP-05	10/9/2007	SP5-SD1	0-0.25	2,980	11 UJ	4.5 N	123	0.37 J	8.4	24,200	5.5	2.3 J	21 J	8,870
SP-06	10/9/2007	SP6-SD1	0-0.5	3,190	19 UJ	4.6 J	323	0.35 J	26	119,000	16	3.5 J	48 J	11,000
SP-07	10/9/2007	SP7-SD1	0-0.5	6,890	11 UJ	46 J	1,090	0.60 J	140	61,000	18	13	167 J	32,400
SP-08	10/9/2007	SP8-SD1	0-0.5	12,400	14 UJ	9.1 J	875	0.76 J	38	17,100	40	7.8 J	217 J	20,900
SP-09	10/9/2007	SP9-SD1	0-0.5	2,010	20 UJ	4.5 J	236	0.16 J	27	18,800	4.6	0.39 J	185 J	5,720
SP-10	10/9/2007	SP10-SD1	0-0.5	2,740	39 UJ	3.5 J	167	3.3 U	8.3	92,100	6.3 J	3.8 J	78 J	17,700

See Notes on Page 2.

Table B-5
DePue Lake Shoreline Seep Sediment TAL Metals Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval	Lead (mg/kg)	Magnesium (mg/kg)	Manganese (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Potassium (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Sodium (mg/kg)	Thallium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
DePue Lake															
SP-01	10/9/2007	SP1-SD1	0-0.25	125	6,160	434	0.89 J	7.0	228 J	5.5 UJ	0.91 J	792 U	1.2 J	8.5	1,490
SP-02	10/9/2007	SP2-SD1	0-0.5	14	37,900	269	0.11 UJ	5.4	209 J	4.7 UJ	0.077 J	673 U	0.47 J	5.8 J	117
SP-03	10/9/2007	SP3-SD1	0-0.33	58	116,000	374	0.26 UJ	9.0 J	623 J	11 UJ	0.43 J	1,600 U	8.0 U	11 J	1,410
SP-04	10/9/2007	SP4-SD1	0-0.25	396	45,300	333	0.17 UJ	8.0	243 J	6.8 UJ	3.8	8,200	1.7 J	15	95,600
SP-05	10/9/2007	SP5-SD1	0-0.25	130	7,940	297	0.19 UJ	6.4 J	431 J	6.6 UJ	0.46 J	942 U	0.75 J	7.8 J	1,450
SP-06	10/9/2007	SP6-SD1	0-0.5	153	4,960	505	0.14 J	9.8 J	398 J	11 UJ	0.45 J	1,610 U	1.6 J	9.6 J	1,950
SP-07	10/9/2007	SP7-SD1	0-0.5	711	4,870	878	2.0 J	21	664 J	3.9 J	2.4	946 U	2.7 J	20	8,750
SP-08	10/9/2007	SP8-SD1	0-0.5	176	6,880	200	0.89 J	28	1,580 J	0.87 J	1.2 J	1,150 U	1.3 J	25	2,720
SP-09	10/9/2007	SP9-SD1	0-0.5	332	5,280	38	0.34 UJ	5.8 J	231 J	2.8 J	2.1 J	1,670 U	8.4 U	6.2 J	1,740
SP-10	10/9/2007	SP10-SD1	0-0.5	37	8,140	137	0.62 UJ	9.5 J	429 J	23 UJ	6.5 U	3,270 U	16 U	9.9 J	1,320

Notes:
Non-detect values reported at the reporting limit.
J - estimated value
N - Associated matrix spike recovery was outside control limits.
U - The analyte was analyzed for, but not detected.
UJ - The analyte was analyzed for, but not detected. Detection limit is estimated.
mg/kg - milligrams per kilogram

Table B-6
DePue Lake Shoreline Seep Surface Water TAL Metals and General Chemistry Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chromium (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Cyanide (mg/L)	Iron (mg/L)
DePue Lake - Shoreline Seep														
Filtered Data														
SP-01	10/9/2007	SP1-SW1	0.022 B	0.0029 U	0.011 U	0.13 J	0.00023 B	0.00050 U	124	0.00050 U	0.0016 U	0.00090 U	NA	0.75
SP-02	10/9/2007	SP2-SW1	0.015 U	0.0029 U	0.015 U	0.078 J	0.00020 U	0.00050 U	168	0.00050 U	0.0016 U	0.00090 U	NA	0.0098 U
SP-03	10/9/2007	SP3-SW1	0.015 U	0.0029 U	0.011 U	0.089 J	0.00020 U	0.00050 U	134	0.00050 U	0.0016 U	0.00090 U	NA	3.2
SP-04	10/9/2007	SP4-SW1	0.017 B	0.0029 U	0.010 U	0.046 J	0.00023 B	0.00050 U	132	0.00050 U	0.0016 U	0.00090 U	NA	0.0098 U
SP-05	10/9/2007	SP5-SW1	0.015 U	0.0029 U	0.010 U	0.14 J	0.00020 U	0.00050 U	135	0.00050 U	0.0016 U	0.00090 U	NA	0.48
SP-06	10/9/2007	SP6-SW1	0.015 U	0.0029 U	0.010 U	0.076 J	0.00021 B	0.00050 U	147	0.00050 U	0.0016 U	0.00090 U	NA	3.4
SP-07	10/9/2007	SP7-SW1	0.015 U	0.0029 U	0.010 U	0.086 J	0.00020 U	0.00050 U	159	0.00050 U	0.0016 U	0.00090 U	NA	2.8
SP-07	10/9/2007	SP11-SW1 (DUP)	0.015 U	0.0029 U	0.010 U	0.085 J	0.00020 U	0.00050 U	159	0.00050 U	0.0016 U	0.00090 U	NA	2.8
SP-08	10/9/2007	SP8-SW1	0.015 U	0.0029 U	0.010 U	0.051 J	0.00020 U	0.00050 U	134	0.00050 U	0.0016 U	0.00090 U	NA	0.0098 U
SP-09	10/9/2007	SP9-SW1	0.015 U	0.0029 U	0.0032 U	0.039 J	0.00020 U	0.00050 U	132	0.00050 U	0.0016 U	0.00090 U	NA	0.0098 U
SP-10	10/9/2007	SP10-SW1	0.015 B	0.0029 U	0.010 U	0.070 J	0.00022 B	0.00050 U	138	0.00050 U	0.0016 U	0.00090 U	NA	0.16
Unfiltered Data														
SP-01	10/9/2007	SP1-SW1	0.015 U	0.010 U	0.0032 U	0.13 B	0.00020 U	0.00050 U	120	0.00050 U	0.0016 U	0.0016 B	0.015 U	1.1
SP-02	10/9/2007	SP2-SW1	0.015 B	0.010 U	0.0032 U	0.082 B	0.00021 B	0.00050 U	168	0.00050 U	0.0016 U	0.00090 U	0.010 U	0.0098 U
SP-03	10/9/2007	SP3-SW1	0.085 B	0.010 U	0.0032 U	0.096 B	0.00020 U	0.00050 U	133	0.00050 U	0.0016 U	0.00090 U	0.010 U	5.6
SP-04	10/9/2007	SP4-SW1	0.27	0.010 U	0.0032 U	0.071 B	0.00020 U	0.00087 B	134	0.00050 U	0.0016 U	0.0038 B	0.016 U	0.37
SP-05	10/9/2007	SP5-SW1	0.92	0.010 U	0.0032 U	0.16 B	0.00020 U	0.00076 B	135	0.0019 B	0.0018 B	0.0049 B	0.016 U	3.7
SP-06	10/9/2007	SP6-SW1	0.15 B	0.010 U	0.0032 U	0.081 B	0.00021 B	0.00050 U	145	0.00050 U	0.0016 U	0.00090 U	0.010 U	3.6
SP-07	10/9/2007	SP7-SW1	0.24	0.010 U	0.0061 B	0.12 B	0.00020 U	0.011	157	0.00050 U	0.0023 B	0.010	0.041	4.5
SP-07	10/9/2007	SP11-SW1 (DUP)	0.30	0.010 U	0.0061 B	0.13 B	0.00020 U	0.014	159	0.0011 B	0.0016 B	0.013	0.010 U	4.6
SP-08	10/9/2007	SP8-SW1	1.4	0.010 U	0.0032 U	0.078 B	0.00024 B	0.0051	138	0.0025 B	0.0025 B	0.045	0.11	2.0
SP-09	10/9/2007	SP9-SW1	0.015 U	0.010 U	0.0032 U	0.041 B	0.00020 U	0.00064 B	133	0.00050 U	0.0016 U	0.0011 B	0.010 U	0.0098 U
SP-10	10/9/2007	SP10-SW1	0.95	0.010 U	0.0032 U	0.14 B	0.00021 B	0.0028 B	141	0.0016 B	0.0016 U	0.017	0.010 U	3.7

See Notes on Page 4.

Table B-6
DePue Lake Shoreline Seep Surface Water TAL Metals and General Chemistry Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Silver (mg/L)	Sodium (mg/L)	Thallium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)	Ammonia (mg/L)
DePue Lake - Shoreline Seep															
Filtered Data															
SP-01	10/9/2007	SP1-SW1	0.0021 U	43	0.40	0.00010 U	0.0013 B	1.2 J	0.0033 B	0.00050 U	73	0.0040 U	0.00040 U	0.0073 J	NA
SP-02	10/9/2007	SP2-SW1	0.0021 U	56	0.00010 U	0.00010 U	0.0012 B	1.3 J	0.011	0.00050 U	36	0.0040 U	0.00040 U	0.012 J	NA
SP-03	10/9/2007	SP3-SW1	0.0021 U	49	0.25	0.00010 U	0.0011 U	2.7 J	0.0057	0.00050 U	39	0.0040 U	0.00040 U	0.22 J	NA
SP-04	10/9/2007	SP4-SW1	0.0021 U	49	0.0018 B	0.00010 U	0.0013 B	3.5 J	0.0049 B	0.00050 U	37	0.0040 U	0.00040 U	0.037 J	NA
SP-05	10/9/2007	SP5-SW1	0.0021 U	48	0.35	0.00010 U	0.0011 U	4.0 J	0.0036 B	0.00050 U	45	0.0040 U	0.00040 U	0.0078 J	NA
SP-06	10/9/2007	SP6-SW1	0.0021 U	53	0.29	0.00010 U	0.0011 U	2.7 J	0.0043 B	0.00050 U	34	0.0040 U	0.00040 U	0.00070 UJ	NA
SP-07	10/9/2007	SP7-SW1	0.0021 U	51	0.38	0.00010 U	0.0011 U	2.6 J	0.0038 B	0.00050 U	47	0.0040 U	0.00040 U	0.032 J	NA
SP-07	10/9/2007	SP11-SW1 (DUP)	0.0021 U	51	0.38	0.00010 U	0.0013 B	2.6 J	0.0033 U	0.00050 U	47	0.0040 U	0.00040 U	0.033 J	NA
SP-08	10/9/2007	SP8-SW1	0.0021 U	47	0.036	0.00010 U	0.0011 U	4.1 J	0.0042 B	0.00050 U	50	0.0040 U	0.00040 U	0.027 J	NA
SP-09	10/9/2007	SP9-SW1	0.0021 U	47	0.00010 U	0.00010 U	0.0013 B	3.7 J	0.0033 U	0.00050 U	50	0.0040 U	0.00041 B	0.055 J	NA
SP-10	10/9/2007	SP10-SW1	0.0021 U	51	0.043	0.00010 U	0.0011 U	3.6 J	0.0052	0.00050 U	56	0.0040 U	0.00047 B	0.029 J	NA
Unfiltered Data															
SP-01	10/9/2007	SP1-SW1	0.0021 U	42	0.40	0.00010 U	0.0011 U	0.99 BJ	0.0033 U	0.00050 U	70	0.0040 U	0.00040 U	0.050 J	0.31
SP-02	10/9/2007	SP2-SW1	0.0021 U	57	0.0016 B	0.00010 U	0.0011 U	1.2 BJ	0.0033 U	0.00050 U	36	0.0040 U	0.00040 U	0.020 UJ	0.10 U
SP-03	10/9/2007	SP3-SW1	0.0021 U	49	0.26	0.00010 U	0.0011 U	2.3 BJ	0.0033 U	0.00050 U	38	0.0040 U	0.00046 B	0.42 J	0.51
SP-04	10/9/2007	SP4-SW1	0.013	48	0.040	0.00010 U	0.0011 U	3.1 BJ	0.0033 U	0.00050 U	36	0.0040 U	0.00089 B	0.11 J	0.10 U
SP-05	10/9/2007	SP5-SW1	0.0088	47	0.40	0.00010 U	0.0022 B	3.6 BJ	0.0033 U	0.00050 U	43	0.0040 U	0.0025 B	0.18 J	0.36
SP-06	10/9/2007	SP6-SW1	0.0021 U	52	0.31	0.00010 U	0.0011 U	2.4 BJ	0.0033 U	0.00050 U	33	0.0040 U	0.00047 B	0.022 UJ	0.68
SP-07	10/9/2007	SP7-SW1	0.023	50	0.40	0.00010 U	0.0011 U	2.3 BJ	0.0033 U	0.00050 U	45	0.0040 U	0.0012 B	1.1 J	0.081 B
SP-07	10/9/2007	SP11-SW1 (DUP)	0.027	51	0.41	0.00010 U	0.0011 U	2.3 BJ	0.0033 U	0.00050 U	46	0.0040 U	0.0015 B	1.2 J	0.088 B
SP-08	10/9/2007	SP8-SW1	0.026	47	0.13	0.00010 U	0.0024 B	4.0 BJ	0.0033 U	0.00050 U	49	0.0040 U	0.0024 B	0.59 J	0.10 U
SP-09	10/9/2007	SP9-SW1	0.0029 B	46	0.00010 U	0.00010 U	0.0011 U	3.3 BJ	0.0033 U	0.00050 U	49	0.0040 U	0.00051 B	0.058 J	0.10 U
SP-10	10/9/2007	SP10-SW1	0.017	50	0.070	0.00010 U	0.0021 B	3.3 BJ	0.0033 U	0.00050 U	54	0.0040 U	0.0034 B	0.38 J	0.38

See Notes on Page 4.

Table B-6
DePue Lake Shoreline Seep Surface Water TAL Metals and General Chemistry Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Chloride (mg/L)	Fluoride (mg/L)	Hardness (mg/L)	Nitrate as N (mg/L)	Nitrite as N (mg/L)	Phosphate (mg/L)	Phosphorus Total (mg/L)	Sulfate (mg/L)	Sulfide (mg/L)	Total Alkalinity (mg/L)	Total Carbon (mg/L)	Total Kjeldahl Nitrogen (mg/L)	Total Organic Carbon (mg/L)
DePue Lake - Shoreline Seep															
Filtered Data															
SP-01	10/9/2007	SP1-SW1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SP-02	10/9/2007	SP2-SW1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SP-03	10/9/2007	SP3-SW1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SP-04	10/9/2007	SP4-SW1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SP-05	10/9/2007	SP5-SW1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SP-06	10/9/2007	SP6-SW1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SP-07	10/9/2007	SP7-SW1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SP-07	10/9/2007	SP11-SW1 (DUP)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SP-08	10/9/2007	SP8-SW1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SP-09	10/9/2007	SP9-SW1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SP-10	10/9/2007	SP10-SW1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unfiltered Data															
SP-01	10/9/2007	SP1-SW1	111	0.20 U	471	0.050 U	0.050 U	0.050 U	0.25 U	78	1.0 U	413	52	0.57	5.0 U
SP-02	10/9/2007	SP2-SW1	82	0.20 U	653	0.050 U	0.050 U	0.050 U	0.25 U	141	1.0 U	380	68	0.16 B	5.0 U
SP-03	10/9/2007	SP3-SW1	54	0.20 U	532	0.050 U	0.050 U	0.050 U	0.30 U	136	1.0 U	429	59	0.61	1.7 B
SP-04	10/9/2007	SP4-SW1	52	0.20 U	534	0.050 U	0.050 U	0.050 U	0.25 U	126	1.0 U	346	54	0.17 B	5.0 U
SP-05	10/9/2007	SP5-SW1	68	0.20 U	532	0.050 U	0.050 U	0.050 U	0.26 U	139	1.0 U	430	53	0.52	2.0 B
SP-06	10/9/2007	SP6-SW1	63	0.20 U	575	0.050 U	0.050 U	0.050 U	0.25 U	229	1.0 U	331	47	0.59	5.0 U
SP-07	10/9/2007	SP7-SW1	77	1.3	599	0.050 U	0.050 U	1.9	3.7	112	1.0 U	476	75	0.49	5.0 B
SP-07	10/9/2007	SP11-SW1 (DUP)	79	1.2	605	0.050 U	0.050 U	0.82	3.7	114	1.0 U	478	83	0.55	5.0 B
SP-08	10/9/2007	SP8-SW1	99	0.20 U	540	0.050 U	0.050 U	0.050 U	0.25 U	172	1.0 U	356	49	0.25	2.2 B
SP-09	10/9/2007	SP9-SW1	96	0.20 U	523	0.75	0.050 U	1.8	0.30 U	162	1.0 U	337	31	0.18 B	5.0 U
SP-10	10/9/2007	SP10-SW1	124	0.37	558	1.2	0.050 U	0.050 U	0.25 U	186	1.0 U	345	50	0.69	2.0 B

See Notes on Page 4.

Table B-6
DePue Lake Shoreline Seep Surface Water TAL Metals and General Chemistry Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Conductivity (ms/cm)	Dissolved Oxygen (mg/L)	pH (SU)	Temperature (°C)
DePue Lake - Shoreline Seep						
Filtered Data						
SP-01	10/9/2007	SP1-SW1	NA	NA	NA	NA
SP-02	10/9/2007	SP2-SW1	NA	NA	NA	NA
SP-03	10/9/2007	SP3-SW1	NA	NA	NA	NA
SP-04	10/9/2007	SP4-SW1	NA	NA	NA	NA
SP-05	10/9/2007	SP5-SW1	NA	NA	NA	NA
SP-06	10/9/2007	SP6-SW1	NA	NA	NA	NA
SP-07	10/9/2007	SP7-SW1	NA	NA	NA	NA
SP-07	10/9/2007	SP11-SW1 (DUP)	NA	NA	NA	NA
SP-08	10/9/2007	SP8-SW1	NA	NA	NA	NA
SP-09	10/9/2007	SP9-SW1	NA	NA	NA	NA
SP-10	10/9/2007	SP10-SW1	NA	NA	NA	NA
Unfiltered Data						
SP-01	10/9/2007	SP1-SW1	0.37	5.4	6.5	19
SP-02	10/9/2007	SP2-SW1	0.40	8.5	7.3	20
SP-03	10/9/2007	SP3-SW1	0.35	6.2	7.0	18
SP-04	10/9/2007	SP4-SW1	0.34	11	7.5	18
SP-05	10/9/2007	SP5-SW1	0.40	7.6	7.5	21
SP-06	10/9/2007	SP6-SW1	0.43	7.2	6.8	14
SP-07	10/9/2007	SP7-SW1	0.41	6.5	7.1	19
SP-07	10/9/2007	SP11-SW1 (DUP)	NA	NA	NA	NA
SP-08	10/9/2007	SP8-SW1	0.42	10	7.2	18
SP-09	10/9/2007	SP9-SW1	0.43	11	7.0	18
SP-10	10/9/2007	SP10-SW1	0.45	12	7.5	17

Notes:
Non-detect values reported at the reporting limit.
NA - not applicable
B - Result value is less than the reporting limit, but greater than the method detection limit.
BJ - Estimated value. Result value is less than the reporting limit, but greater than the method detection limit.
J - estimated value
U - The analyte was analyzed for, but not detected.
UJ - The analyte was analyzed for, but not detected. Detection limit is estimated.
°C - degrees Celsius
mg/L - milligrams per kilogram
ms/cm - millisiemens per centimeter
SU - Standard Units

TABLE B-7

Analytical Results for Seep Samples
First Quarterly Groundwater Monitoring Event (August and November 2007)[1]
Phase II Remedial Investigation
OU3: On-Site Soils and Groundwater
DePue Site

Sample Name		DPN003-081707	DPN004-081707	DPN005-08107
Sample Location		N003	N004	N005
Sample Type		SW	SW	SW
Sample Matrix		20070076	20070077	20070078
Sample Date		8/17/2007	8/17/2007	8/17/2007
Aluminum	(ug/L)	17.1 U	247	17.1 U
Arsenic	(ug/L)	3.2 U	3.2 U	3.2 U
Barium	(ug/L)	114 J	106 J	35.7 J
Beryllium	(ug/L)	0.40 U	0.40 U	0.40 U
Cadmium	(ug/L)	2.7 U	3.9 B	0.50 U
Chromium	(ug/L)	0.60 U	0.60 U	0.60 U
Cobalt	(ug/L)	6.5 U	2.4 B	7.4
Copper	(ug/L)	1.1 U	146	1.1 U
Iron	(ug/L)	15,300	938	3,290
Lead	(ug/L)	1.3 U	10	1.3 U
Manganese	(ug/L)	659	1,240	1,470
Mercury	(ug/L)	0.10 U	0.10 U	0.10 U
Nickel	(ug/L)	1.2 U	2.6 B	5.6 B
Selenium	(ug/L)	2.3 U	2.3 U	2.3 U
Silver	(ug/L)	0.60 U	0.60 U	0.60 U
Thallium	(ug/L)	0.014 U	0.029 U	0.007 U
Vanadium	(ug/L)	0.60 U	0.84 U	0.60 U
Zinc	(ug/L)	70.1	735	953
Ammonia	(mg/L)	88.5	50.4	32.2
Fluoride	(mg/L)	0.200 U	0.595	0.350
Nitrate/Nitrite	(mg/L)	0.0367 J	0.687 J	0.139 J
Nitrite/N	(mg/L)	0.0500 U	0.215	0.0500 U
Sulfate	(mg/L)	1,240	848	464
Phosphorus, Total	(mg/L)	6.06 B	28.9	5.46
Radium 228	(pCi/L)	1.19	-0.219	-0.048

Key:

B: The result was lower than the Contract Required Detection Limit but equal to or greater than the instrument Detection Limit
E: The reported value is estimated because of the presence of interference.
J: The concentration is estimated because the concentration was below the sample detection limit
SW: Surface water
U: Sample was not detected above the listed detection limit

Notes:

1. Data are from ENVIRON reports.

Table B-8
High Flow Surface Water TAL Metals, Cyanide, and General Chemistry Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chromium (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Cyanide (mg/L)	Iron (mg/L)
DePue Lake - Ambient Water (High Flow)														
Filtered Data														
SW-1	9/20/2006	SW-1	0.20 U	0.0036 B	0.0055 B	0.047 B	0.00020 U	0.00020 U	63	0.00070 U	0.00050 U	0.0015 J	NA	0.011 U
SW-2	9/20/2006	SW-2	0.0092 U	0.0015 U	0.0048 B	0.050 B	0.00020 U	0.00020 U	64	0.00070 U	0.00050 U	0.0010 J	NA	0.011 U
SW-2	9/20/2006	SW-DUP-1 (DUP)	0.0092 U	0.0015 U	0.0040 B	0.051 B	0.00020 U	0.00020 U	65	0.00070 U	0.00050 U	0.0014 J	NA	0.011 U
SW-3	9/20/2006	SW-3	0.20 U	0.0015 U	0.0060 B	0.045 B	0.00020 U	0.00020 U	64	0.00070 U	0.00050 U	0.0023 J	NA	0.011 U
SW-4	9/20/2006	SW-4	0.0092 U	0.0015 U	0.0063 B	0.044 B	0.00020 U	0.00020 U	66	0.00070 U	0.00050 U	0.0022 J	NA	0.011 U
SW-5	9/20/2006	SW-5	0.20 U	0.0015 U	0.0050 B	0.043 B	0.00020 U	0.00020 U	65	0.00070 U	0.00050 U	0.0024 J	NA	0.011 U
SW-6	9/20/2006	SW-6	0.0092 U	0.0015 U	0.0063 B	0.046 B	0.00020 U	0.00020 U	68	0.00070 U	0.00050 U	0.0029 J	NA	0.011 U
SW-7	9/20/2006	SW-7	0.20 U	0.0015 U	0.0069 B	0.054 B	0.00020 U	0.00020 U	71	0.00070 U	0.00050 U	0.0029 J	NA	0.011 U
SW-8	9/20/2006	SW-8	0.0092 U	0.0015 U	0.0051 B	0.044 B	0.00020 U	0.00020 U	66	0.00070 U	0.00050 U	0.0027 J	NA	0.011 U
SW-9	9/20/2006	SW-9	0.0092 U	0.0015 U	0.0047 B	0.044 B	0.00020 U	0.00020 U	65	0.00070 U	0.00050 U	0.0030 J	NA	0.011 U
SW-10	9/20/2006	SW-10	0.0092 U	0.0015 U	0.0088 B	0.035 B	0.00020 U	0.00020 U	74	0.00070 U	0.00050 U	0.0064	NA	0.011 U
Unfiltered Data														
SW-1	9/20/2006	SW-1	0.84	0.010 U	0.0028 U	0.057 B	0.00040 U	0.0050 U	68	0.010 U	0.0018 B	0.0035 B	0.010	1.0
SW-2	9/20/2006	SW-2	2.0	0.010 U	0.0028 U	0.069 B	0.00047 B	0.0050 U	66	0.0042 B	0.0017 B	0.0049 B	0.0043 B	2.7
SW-2	9/20/2006	SW-DUP-1 (DUP)	1.9	0.010 U	0.0028 U	0.069 B	0.00051 B	0.0050 U	68	0.0046 B	0.0023 B	0.0042 B	0.0046 B	2.6
SW-3	9/20/2006	SW-3	0.86	0.010 U	0.0028 U	0.053 B	0.00048 B	0.0050 U	65	0.010 U	0.0012 B	0.0047 B	0.0082 B	1.0
SW-4	9/20/2006	SW-4	1.2	0.010 U	0.0028 U	0.057 B	0.00044 B	0.0050 U	68	0.0031 B	0.0013 B	0.0086	0.0088 B	1.4
SW-5	9/20/2006	SW-5	1.1	0.010 U	0.0028 U	0.053 B	0.00040 U	0.0050 U	63	0.010 U	0.0011 B	0.0084	0.0091 B	1.4
SW-6	9/20/2006	SW-6	1.2	0.010 U	0.0028 U	0.055 B	0.00041 B	0.0050 U	67	0.010 U	0.00098 B	0.0087	0.0089 B	1.4
SW-7	9/20/2006	SW-7	0.83	0.010 U	0.0028 U	0.066 B	0.00048 B	0.0050 U	74	0.010 U	0.0015 B	0.0069	0.0098 B	1.1
SW-8	9/20/2006	SW-8	2.0	0.010 U	0.0028 U	0.076 B	0.00059 B	0.0034 B	70	0.0043 B	0.0030 B	0.017	0.0070 B	2.7
SW-9	9/20/2006	SW-9	0.98	0.010 U	0.0028 U	0.061 B	0.00040 U	0.0042 B	69	0.010 U	0.0019 B	0.016	0.011	1.3
SW-10	9/20/2006	SW-10	1.4	0.010 U	0.010 U	0.055 B	0.00054 B	0.0072	80	0.0038 B	0.0031 B	0.036	0.0090 B	1.8
Goose Lake - Ambient Water (High Flow)														
Filtered Data														
GLSW-01	9/21/2006	GLSW-01	0.0092 U	0.0015 U	0.0073 B	0.054 B	0.00020 U	0.00020 U	60	0.00070 U	0.00050 U	0.0016 J	NA	0.011 U
GLSW-02	9/21/2006	GLSW-02	0.0092 U	0.0015 U	0.0056 B	0.047 B	0.00020 U	0.00020 U	56	0.00070 U	0.00050 U	0.0018 J	NA	0.011 U
Unfiltered Data														
GLSW-01	9/21/2006	GLSW-01	4.0	0.010 U	0.010 U	0.090 B	0.00051 B	0.0050 U	68	0.0088 B	0.0029 B	0.0077	0.0012 U	5.3
GLSW-02	9/21/2006	GLSW-02	4.8	0.010 U	0.0028 U	0.092 B	0.00058 B	0.0050 U	65	0.011	0.0031 B	0.0099	0.0012 U	6.9

See Notes on Page 4.

Table B-8
High Flow Surface Water TAL Metals, Cyanide, and General Chemistry Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Silver (mg/L)	Sodium (mg/L)	Thallium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)	Ammonia (mg/L)
DePue Lake - Ambient Water (High Flow)															
Filtered Data															
SW-1	9/20/2006	SW-1	0.0014 U	28	0.016 J	0.00010 U	0.0041 B	7.2 J	0.0030 B	0.00060 UJ	55	0.0033 U	0.0036 B	0.0024 B	NA
SW-2	9/20/2006	SW-2	0.0014 U	27	0.19 J	0.00010 U	0.0035 B	8.3 J	0.0036 B	0.00060 UJ	49	0.0033 U	0.020 U	0.0011 B	NA
SW-2	9/20/2006	SW-DUP-1 (DUP)	0.0014 U	27	0.19 J	0.00010 U	0.0035 B	8.5 J	0.0039 B	0.00060 UJ	50	0.0033 U	0.020 U	0.00091 B	NA
SW-3	9/20/2006	SW-3	0.0014 U	29	0.017 J	0.00010 U	0.0040 B	7.5 J	0.0037 B	0.00060 UJ	57	0.0033 U	0.0032 B	0.0039 B	NA
SW-4	9/20/2006	SW-4	0.0014 U	29	0.062 J	0.00010 U	0.0037 B	7.5 J	0.0026 B	0.00060 UJ	59	0.0033 U	0.0034 B	0.0071 B	NA
SW-5	9/20/2006	SW-5	0.0014 U	29	0.051 J	0.00010 U	0.0042 B	7.5 J	0.0036 B	0.00060 UJ	58	0.0033 U	0.0031 B	0.0057 B	NA
SW-6	9/20/2006	SW-6	0.0014 U	30	0.044 J	0.00010 U	0.0049 B	7.4 J	0.0028 B	0.00060 UJ	59	0.0033 U	0.0036 B	0.0040 B	NA
SW-7	9/20/2006	SW-7	0.0014 U	31	0.10 J	0.00010 U	0.0040 B	7.0 J	0.0038 B	0.00060 UJ	59	0.0033 U	0.0030 B	0.0068 B	NA
SW-8	9/20/2006	SW-8	0.0014 U	29	0.040 J	0.00010 U	0.0039 B	7.4 J	0.0033 B	0.00060 UJ	59	0.0033 U	0.0033 B	0.0073 B	NA
SW-9	9/20/2006	SW-9	0.0014 U	29	0.030 J	0.00010 U	0.0034 B	7.4 J	0.0032 B	0.00060 UJ	58	0.0033 U	0.0033 B	0.0081 B	NA
SW-10	9/20/2006	SW-10	0.0014 U	34	0.077 J	0.00010 U	0.0048 B	9.1 J	0.0039 B	0.00060 UJ	63	0.0033 U	0.0033 B	0.13	NA
Unfiltered Data															
SW-1	9/20/2006	SW-1	0.0058	27	0.13	0.00010 U	0.0039 B	5.5 J	0.0022 U	0.0050 U	54	0.0036 U	0.0053 B	0.067	0.17
SW-2	9/20/2006	SW-2	0.0063	24	0.32	0.00010 U	0.0049 B	6.4 J	0.0050 U	0.00030 U	44	0.0036 U	0.0062 B	0.11	0.062 B
SW-2	9/20/2006	SW-DUP-1 (DUP)	0.0053	25	0.31	0.00010 U	0.0060 B	6.3 J	0.0022 U	0.0050 U	44	0.0036 U	0.0061 B	0.11	0.083 B
SW-3	9/20/2006	SW-3	0.0057	26	0.15	0.00010 U	0.0042 B	5.4 J	0.0022 U	0.00030 U	52	0.0036 U	0.0046 B	0.098	0.25
SW-4	9/20/2006	SW-4	0.0093	27	0.21	0.00010 U	0.0045 B	5.7 J	0.0050 U	0.0050 U	55	0.0036 U	0.0053 B	0.25	0.35
SW-5	9/20/2006	SW-5	0.0086	25	0.20	0.00010 U	0.0049 B	5.3 J	0.0022 U	0.00030 U	50	0.0036 U	0.0050 B	0.18	0.31
SW-6	9/20/2006	SW-6	0.0079	26	0.18	0.00010 U	0.0042 B	5.4 J	0.0050 U	0.00030 U	52	0.0036 U	0.0051 B	0.19	0.26
SW-7	9/20/2006	SW-7	0.0067	28	0.23	0.00010 U	0.0041 B	5.2 J	0.0022 U	0.00030 U	55	0.0036 U	0.0046 B	0.12	0.27
SW-8	9/20/2006	SW-8	0.020	27	0.25	0.00010 U	0.0058 B	5.6 J	0.0050 U	0.00030 U	53	0.0036 U	0.0068 B	0.41	0.37
SW-9	9/20/2006	SW-9	0.025	27	0.18	0.00010 U	0.0047 B	5.4 J	0.0050 U	0.0050 U	52	0.0036 U	0.0050 B	0.34	0.18
SW-10	9/20/2006	SW-10	0.020	32	0.21	0.00010 U	0.0061 B	6.9 J	0.0022 U	0.00030 U	59	0.0036 U	0.0058 B	1.0	0.35
Goose Lake - Ambient Water (High Flow)															
Filtered Data															
GLSW-01	9/21/2006	GLSW-01	0.0014 U	27	0.010 UJ	0.00010 U	0.0041 B	6.1 J	0.0018 U	0.00060 UJ	49	0.0033 U	0.0053 B	0.00040 U	NA
GLSW-02	9/21/2006	GLSW-02	0.0014 U	24	0.0015 J	0.00010 U	0.0042 B	5.7 J	0.0034 B	0.00060 UJ	48	0.0033 U	0.0049 B	0.00040 U	NA
Unfiltered Data															
GLSW-01	9/21/2006	GLSW-01	0.011	26	0.21	0.00010 U	0.0096 B	5.2 J	0.0050 U	0.00030 U	44	0.0036 U	0.013 B	0.051	0.10 U
GLSW-02	9/21/2006	GLSW-02	0.013	24	0.23	0.00010 U	0.011 B	5.0 BJ	0.0050 U	0.0050 U	43	0.0036 U	0.014 B	0.064	0.10 U

See Notes on Page 4.

Table B-8
High Flow Surface Water TAL Metals, Cyanide, and General Chemistry Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Chloride (mg/L)	Fluoride (mg/L)	Hardness (mg/L)	Nitrate as N (mg/L)	Nitrite as N (mg/L)	Phosphate (mg/L)	Phosphorus Total (mg/L)	Sulfate (mg/L)	Sulfide (mg/L)	Total Alkalinity (mg/L)	Total Carbon (mg/L)	Total Kjeldahl Nitrogen (mg/L)
DePue Lake - Ambient Water (High Flow)														
Filtered Data														
SW-1	9/20/2006	SW-1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW-2	9/20/2006	SW-2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW-2	9/20/2006	SW-DUP-1 (DUP)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW-3	9/20/2006	SW-3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW-4	9/20/2006	SW-4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW-5	9/20/2006	SW-5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW-6	9/20/2006	SW-6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW-7	9/20/2006	SW-7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW-8	9/20/2006	SW-8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW-9	9/20/2006	SW-9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW-10	9/20/2006	SW-10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unfiltered Data														
SW-1	9/20/2006	SW-1	65	0.31	281	1.1	0.050 U	0.43 J	0.45 U	72	1.0 U	185 J	21	1.3
SW-2	9/20/2006	SW-2	62	0.26	264	0.40	0.050 U	0.56 J	0.57	54	1.0 U	205	30	1.1
SW-2	9/20/2006	SW-DUP-1 (DUP)	61	0.28	272	0.46	0.050 U	0.050 UJ	0.60	53	1.0 U	206	30	1.4
SW-3	9/20/2006	SW-3	68	0.32	268	1.2	0.050 U	0.22 J	0.43 U	78	0.60 B	185	25	1.3
SW-4	9/20/2006	SW-4	70	0.32	281	1.2	0.050 U	0.050 UJ	0.46 U	86	1.0 U	188	30	0.98
SW-5	9/20/2006	SW-5	67	0.29	261	1.2	0.050 U	0.050 UJ	0.46 U	83	0.60 B	185	25	1.2
SW-6	9/20/2006	SW-6	69	0.31	276	1.2	0.050 U	0.050 UJ	0.46 U	82	1.0 U	189	26	1.3
SW-7	9/20/2006	SW-7	71	0.33	302	1.2	0.050 U	0.050 UJ	0.45 U	85	1.0 U	208	28	2.0
SW-8	9/20/2006	SW-8	69	0.41	286	1.3	0.050 U	0.050 UJ	0.57	84	1.0 U	185	26	0.97
SW-9	9/20/2006	SW-9	68	0.33	281	1.2	0.050 U	0.050 UJ	0.45 U	84	1.0 U	187	25	1.6
SW-10	9/20/2006	SW-10	70	0.38	328	0.59	0.050 U	0.33 J	0.93	104	1.0 U	217	33	1.9
Goose Lake - Ambient Water (High Flow)														
Filtered Data														
GLSW-01	9/21/2006	GLSW-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GLSW-02	9/21/2006	GLSW-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unfiltered Data														
GLSW-01	9/21/2006	GLSW-01	72	0.30	276	0.050 U	0.050 U	0.050 UJ	0.53	61	1.0 U	193	29	0.55
GLSW-02	9/21/2006	GLSW-02	68	0.30	261	1.5	0.050 U	0.050 UJ	0.63	60	1.0 U	162	24	0.90

See Notes on Page 4.

Table B-8
High Flow Surface Water TAL Metals, Cyanide, and General Chemistry Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Total Organic Carbon (mg/L)	Conductivity (ms/cm)	Dissolved Oxygen (mg/L)	pH (SU)	Temperature (°C)	Total Water Depth (ft)	Total Sample Depth (ft)	Turbidity (NTU)
DePue Lake - Ambient Water (High Flow)										
Filtered Data										
SW-1	9/20/2006	SW-1	NA	NA	NA	NA	NA	NA	NA	NA
SW-2	9/20/2006	SW-2	NA	NA	NA	NA	NA	NA	NA	NA
SW-2	9/20/2006	SW-DUP-1 (DUP)	NA	NA	NA	NA	NA	NA	NA	NA
SW-3	9/20/2006	SW-3	NA	NA	NA	NA	NA	NA	NA	NA
SW-4	9/20/2006	SW-4	NA	NA	NA	NA	NA	NA	NA	NA
SW-5	9/20/2006	SW-5	NA	NA	NA	NA	NA	NA	NA	NA
SW-6	9/20/2006	SW-6	NA	NA	NA	NA	NA	NA	NA	NA
SW-7	9/20/2006	SW-7	NA	NA	NA	NA	NA	NA	NA	NA
SW-8	9/20/2006	SW-8	NA	NA	NA	NA	NA	NA	NA	NA
SW-9	9/20/2006	SW-9	NA	NA	NA	NA	NA	NA	NA	NA
SW-10	9/20/2006	SW-10	NA	NA	NA	NA	NA	NA	NA	NA
Unfiltered Data										
SW-1	9/20/2006	SW-1	5.7	0.73	12	8.3	18	2.3	1.0	29
SW-2	9/20/2006	SW-2	6.3	0.71	10	8.2	19	1.2	0.70	58
SW-2	9/20/2006	SW-DUP-1 (DUP)	6.5	NA	NA	NA	NA	NA	NA	NA
SW-3	9/20/2006	SW-3	6.1	0.75	13	8.6	18	3.2	2.0	39
SW-4	9/20/2006	SW-4	5.9	0.78	9.8	8.1	17	4.5	4.0	73
SW-5	9/20/2006	SW-5	6.0	0.77	11	8.4	18	4.8	4.0	52
SW-6	9/20/2006	SW-6	6.1	0.77	14	8.7	20	1.4	0.70	60
SW-7	9/20/2006	SW-7	5.9	0.79	12	8.5	20	1.0	0.50	47
SW-8	9/20/2006	SW-8	5.8	0.77	10	8.3	17	1.5	0.80	63
SW-9	9/20/2006	SW-9	6.1	0.76	17	8.9	19	1.9	1.0	35
SW-10	9/20/2006	SW-10	7.1	0.84	14	8.6	21	1.0	0.50	60
Goose Lake - Ambient Water (High Flow)										
Filtered Data										
GLSW-01	9/21/2006	GLSW-01	NA	NA	NA	NA	NA	NA	NA	NA
GLSW-02	9/21/2006	GLSW-02	NA	NA	NA	NA	NA	NA	NA	NA
Unfiltered Data										
GLSW-01	9/21/2006	GLSW-01	7.9	0.66	18	9.3	18	0.80	0.50	194
GLSW-02	9/21/2006	GLSW-02	5.2	0.64	12	8.9	17	2.0	1.1	190

Notes:
Non-detect values reported at the reporting limit.
NA - not applicable
B - Result value is less than the reporting limit, but greater than the method detection limit.
BJ - Estimate value. Result value is less than the reporting limit, but greater than the method detection limit.
J - estimated value
U - The analyte was analyzed for, but not detected.
UJ - The analyte was analyzed for, but not detected. Detection limit is estimated.
°C - degrees Celsius
ft - feet
mg/L - milligrams per kilogram
ms/cm - millisiemens per centimeter
NTU - Nephelometric Turbidity Units
SU - Standard Units

Table B-9
Low Flow Surface Water TAL Metals, Cyanide, and General Chemistry Results

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chromium (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Cyanide (mg/L)	Iron (mg/L)
DePue Lake - Ambient Water (Low Flow)														
Filtered Data														
SW-3	10/11/2007	SW-3	0.16 B	0.0029 U	0.010 U	0.057 J	0.00021 B	0.00050 U	76	0.00050 U	0.0016 U	0.00090 U	NA	0.0098 U
SW-4	10/11/2007	SW-4	0.015 U	0.0029 U	0.010 U	0.056 J	0.00020 U	0.00050 U	77	0.00050 U	0.0016 U	0.00090 U	NA	0.0098 U
SW-5	10/11/2007	SW-5	0.016 B	0.0029 U	0.010 U	0.057 J	0.00020 U	0.00050 U	78	0.00050 U	0.0016 U	0.00090 U	NA	0.0098 U
SW-6	10/11/2007	SW-6	0.019 B	0.0029 U	0.010 U	0.060 J	0.00020 B	0.00050 U	117	0.00050 U	0.0016 U	0.0029 B	NA	0.0098 U
SW-7	10/11/2007	SW-7	0.15 B	0.0029 U	0.010 U	0.061 J	0.00021 B	0.00050 U	79	0.00050 U	0.0016 U	0.00096 B	NA	0.0098 U
SW-8	10/11/2007	SW-8	0.015 B	0.0029 U	0.010 U	0.052 J	0.00020 U	0.00050 U	106	0.00050 U	0.0016 U	0.00090 U	NA	0.0098 U
SW-9	10/11/2007	SW-9	0.070 B	0.0029 U	0.010 U	0.059 J	0.00020 U	0.00050 U	79	0.00050 U	0.0016 U	0.00090 U	NA	0.0098 U
SW-10	10/11/2007	SW-10	0.019 B	0.0029 U	R	0.021 J	0.00023 B	0.00050 U	200	0.00050 U	0.0085	0.0060	NA	0.0098 U
Unfiltered Data														
SW-3	10/11/2007	SW-3	0.89	0.010 U	0.0032 U	0.076 B	0.00022 B	0.00050 U	77	0.0018 B	0.0017 B	0.0046 B	0.083	1.5
SW-4	10/11/2007	SW-4	1.7	0.010 U	0.0032 U	0.090 B	0.00022 B	0.0013 B	82	0.0039 B	0.0024 B	0.011	0.082	2.6
SW-5	10/11/2007	SW-5	1.2	0.010 U	0.0032 U	0.083 B	0.00029 B	0.00079 B	79	0.0023 B	0.0016 U	0.0088	0.055	1.9
SW-6	10/11/2007	SW-6	1.9	0.010 U	0.0032 U	0.084 B	0.00025 B	0.0026 B	123	0.0043 B	0.0039 B	0.028	0.053	2.7
SW-7	10/11/2007	SW-7	1.4	0.010 U	0.0032 U	0.088 B	0.00026 B	0.00066 B	78	0.0030 B	0.0016 U	0.0085	0.049	2.2
SW-8	10/11/2007	SW-8	0.089 B	0.010 U	0.0032 U	0.057 B	0.00020 U	0.00050 U	106	0.00050 U	0.0016 U	0.0029 B	0.017 U	0.14
SW-9	10/11/2007	SW-9	2.0	0.010 U	0.0032 U	0.10 B	0.00023 B	0.0056	79	0.0040 B	0.0019 B	0.036	0.058	3.2
SW-10	10/11/2007	SW-10	0.47	0.010 U	R	0.037 B	0.00024 B	0.0032 B	194	0.00092 B	0.011	0.057	0.011 U	0.99
Goose Lake - Ambient Water (Low Flow)														
Filtered Data														
GLSW-01	10/11/2007	GLSW-1	0.040 B	0.0029 U	0.0035 B	0.050 BJ	0.00020 U	0.00050 U	71 J	0.00060 B	0.0016 U	0.0011 B	NA	0.0098 U
GLSW-02	10/11/2007	GLSW-2	0.032 B	0.0029 U	0.0054 B	0.050 BJ	0.00022 B	0.00050 U	70 J	0.00050 U	0.0016 U	0.00090 U	NA	0.0098 U
Unfiltered Data														
GLSW-01	10/11/2007	GLSW-1	1.9 J	0.0065 U	0.0032 U	0.067 BJ	0.00021 B	0.00050 U	69	0.0036 B	0.0016 U	0.0041 B	0.036	2.1
GLSW-02	10/11/2007	GLSW-2	2.0 J	0.010 U	0.0032 U	0.068 BJ	0.00020 U	0.00050 U	70	0.0042 B	0.0019 B	0.0041 B	0.032	2.2

See Notes on Page 4.

Table B-9
Low Flow Surface Water TAL Metals, Cyanide, and General Chemistry Results

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Silver (mg/L)	Sodium (mg/L)	Thallium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
DePue Lake - Ambient Water (Low Flow)														
Filtered Data														
SW-3	10/11/2007	SW-3	0.0021 U	41	0.061	0.00010 U	0.0049 B	6.1 J	0.0033 U	0.00050 U	64	0.0040 U	0.0026 B	0.0090 J
SW-4	10/11/2007	SW-4	0.0021 U	42	0.016	0.00010 U	0.0048 B	6.2 J	0.0033 B	0.00050 U	64	0.0040 U	0.0021 B	0.0011 J
SW-5	10/11/2007	SW-5	0.0021 U	42	0.011	0.00010 U	0.0057 B	6.2 J	0.0033 U	0.00050 U	64	0.0040 U	0.0019 B	0.0020 UJ
SW-6	10/11/2007	SW-6	0.0021 U	60	0.29	0.00010 U	0.0058 B	6.5 J	0.0033 U	0.00050 U	82	0.0040 U	0.0029 B	0.011 J
SW-7	10/11/2007	SW-7	0.0021 U	43	0.049	0.00010 U	0.0043 B	6.3 J	0.0033 U	0.00050 U	66	0.0040 U	0.0024 B	0.014 J
SW-8	10/11/2007	SW-8	0.0021 U	39	0.081	0.00010 U	0.0030 B	15 J	0.0033 U	0.00050 U	199	0.0040 U	0.00040 U	0.020 J
SW-9	10/11/2007	SW-9	0.0027 B	43	0.039	0.00010 U	0.0043 B	6.2 J	0.0033 U	0.00050 U	65	0.0040 U	0.0022 B	0.018 J
SW-10	10/11/2007	SW-10	0.0021 U	103	1.4	0.00010 U	0.0080 B	9.0 J	0.0090	0.00050 U	121	0.0040 U	0.00053 B	0.87 J
Unfiltered Data														
SW-3	10/11/2007	SW-3	0.010	41	0.40	0.00010 U	0.0050 B	5.8 J	0.0033 U	0.00050 U	63	0.0040 U	0.0052 B	0.067 J
SW-4	10/11/2007	SW-4	0.018	44	0.48	0.00010 U	0.0074 B	6.2 J	0.0033 U	0.00050 U	65	0.0040 U	0.0070 B	0.19 J
SW-5	10/11/2007	SW-5	0.014	42	0.44	0.00010 U	0.0055 B	6.0 J	0.0033 U	0.00050 U	64	0.0040 U	0.0057 B	0.15 J
SW-6	10/11/2007	SW-6	0.028	61	0.61	0.00010 U	0.0083 B	6.1 J	0.0033 U	0.00050 U	81	0.0040 U	0.0067 B	0.49 J
SW-7	10/11/2007	SW-7	0.017	42	0.42	0.00010 U	0.0063 B	5.9 J	0.0033 U	0.00050 U	64	0.0040 U	0.0060 B	0.13 J
SW-8	10/11/2007	SW-8	0.0021 U	39	0.092	0.00010 U	0.0011 U	13 J	0.0033 U	0.00050 U	195	0.0040 U	0.00056 B	0.032 J
SW-9	10/11/2007	SW-9	0.072	42	0.47	0.00018 B	0.0076 B	6.0 J	0.0033 U	0.00050 U	62	0.0040 U	0.0070 B	0.58 J
SW-10	10/11/2007	SW-10	0.014	100	1.4	0.00010 U	0.0078 B	7.9 J	0.0033 U	0.00050 U	117	0.0040 U	0.0020 B	1.8 J
Goose Lake - Ambient Water (Low Flow)														
Filtered Data														
GLSW-01	10/11/2007	GLSW-1	0.0021 U	34 J	0.0056 BJ	0.00010 U	0.0051 B	5.2 J	0.0033 U	0.00050 U	63 J	0.0040 U	0.0039 B	0.020 U
GLSW-02	10/11/2007	GLSW-2	0.0021 U	33 J	0.011 J	0.00010 U	0.0030 B	5.3 J	0.0033 U	0.00050 U	61 J	0.0040 U	0.0043 B	0.020 U
Unfiltered Data														
GLSW-01	10/11/2007	GLSW-1	0.0055	31	0.15	0.00010 U	0.0067 B	5.0 B	0.0033 U	0.00050 U	58	0.0040 U	0.0073 B	0.025
GLSW-02	10/11/2007	GLSW-2	0.0054	32	0.16	0.00010 U	0.0070 B	5.0	0.0033 U	0.00050 U	58	0.0040 U	0.0073 B	0.019 B

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Table B-9
Low Flow Surface Water TAL Metals, Cyanide, and General Chemistry Results

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Ammonia (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Hardness (mg/L)	Nitrate as N (mg/L)	Nitrite as N (mg/L)	Phosphate (mg/L)	Phosphorus Total (mg/L)	Sulfate (mg/L)	Sulfide (mg/L)	Total Alkalinity (mg/L)	Total Carbon (mg/L)	Total Kjeldahl Nitrogen (mg/L)
DePue Lake - Ambient Water (Low Flow)															
Filtered Data															
SW-3	10/11/2007	SW-3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW-4	10/11/2007	SW-4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW-5	10/11/2007	SW-5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW-6	10/11/2007	SW-6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW-7	10/11/2007	SW-7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW-8	10/11/2007	SW-8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW-9	10/11/2007	SW-9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW-10	10/11/2007	SW-10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unfiltered Data															
SW-3	10/11/2007	SW-3	0.25	89	0.40	363	0.050 U	0.050 U	0.050 U	0.33 U	126	1.0 U	255	39	1.5
SW-4	10/11/2007	SW-4	0.85	90	0.45	385	0.050 U	0.050 U	0.050 U	0.32 U	134	1.0 U	251	41	1.9
SW-5	10/11/2007	SW-5	0.91	88	0.44	373	0.050 U	0.050 U	0.050 U	0.35 U	141	1.0 U	253	38	2.0
SW-6	10/11/2007	SW-6	3.2	87	0.41	560	0.20	0.050 U	0.050 U	0.66	301	1.0 U	345	52	4.1
SW-7	10/11/2007	SW-7	0.65	90	0.40	367	0.21	0.050 U	0.050 U	0.37 U	129	1.0 U	257	36	2.0
SW-8	10/11/2007	SW-8	0.22	341	0.88	424	17	0.050 U	1.4	2.7	110	1.0 U	316	33	0.84
SW-9	10/11/2007	SW-9	0.89	89	0.36	370	0.050 U	0.050 U	0.050 U	0.37 U	134	1.0 U	254	33	1.9
SW-10	10/11/2007	SW-10	36	35	0.29	896	1.2	0.050 U	1.7	3.5	800	1.0 U	398	56	26
Goose Lake - Ambient Water (Low Flow)															
Filtered Data															
GLSW-01	10/11/2007	GLSW-1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GLSW-02	10/11/2007	GLSW-2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unfiltered Data															
GLSW-01	10/11/2007	GLSW-1	0.10 UJ	99	0.44	302	1.1 J	0.050 U	0.050 U	0.53 U	78	1.0 U	210	5.9	0.87 U
GLSW-02	10/11/2007	GLSW-2	0.079 BJ	102	0.50	306	0.41 J	0.050 U	0.050 U	0.64 U	77	1.0 U	203	6.1	0.87 U

See Notes on Page 4

Table B-9
Low Flow Surface Water TAL Metals, Cyanide, and General Chemistry Results

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Total Organic Carbon (mg/L)	Conductivity (ms/cm)	Dissolved Oxygen (mg/L)	pH (SU)	Temperature (°C)	Total Water Depth (ft)	Total Sample Depth (ft)	Turbidity (NTU)
DePue Lake - Ambient Water (Low Flow)										
Filtered Data										
SW-3	10/11/2007	SW-3	NA	NA	NA	NA	NA	NA	NA	NA
SW-4	10/11/2007	SW-4	NA	NA	NA	NA	NA	NA	NA	NA
SW-5	10/11/2007	SW-5	NA	NA	NA	NA	NA	NA	NA	NA
SW-6	10/11/2007	SW-6	NA	NA	NA	NA	NA	NA	NA	NA
SW-7	10/11/2007	SW-7	NA	NA	NA	NA	NA	NA	NA	NA
SW-8	10/11/2007	SW-8	NA	NA	NA	NA	NA	NA	NA	NA
SW-9	10/11/2007	SW-9	NA	NA	NA	NA	NA	NA	NA	NA
SW-10	10/11/2007	SW-10	NA	NA	NA	NA	NA	NA	NA	NA
Unfiltered Data										
SW-3	10/11/2007	SW-3	9.7	0.88	11	8.9	14	1.7	0.85	188
SW-4	10/11/2007	SW-4	9.0	0.89	6.7	8.5	15	3.3	1.8	190
SW-5	10/11/2007	SW-5	8.6	0.91	6.4	8.4	14	3.4	1.6	195
SW-6	10/11/2007	SW-6	8.2	0.13	7.9	8.5	14	0.35	0.17	255
SW-7	10/11/2007	SW-7	9.2	0.90	7.8	8.6	16	0.70	0.35	207
SW-8	10/11/2007	SW-8	3.6 B	0.15	6.3	8.0	19	0.30	0.15	115
SW-9	10/11/2007	SW-9	8.4	0.89	6.8	8.4	15	0.75	0.35	214
SW-10	10/11/2007	SW-10	4.0 B	0.21	7.6	7.9	14	1.0	0.50	149
Goose Lake - Ambient Water (Low Flow)										
Filtered Data										
GLSW-01	10/11/2007	GLSW-1	NA	NA	NA	NA	NA	NA	NA	NA
GLSW-02	10/11/2007	GLSW-2	NA	NA	NA	NA	NA	NA	NA	NA
Unfiltered Data										
GLSW-01	10/11/2007	GLSW-1	5.9	0.77	6.8	8.5	9.1	0.60	0.30	259
GLSW-02	10/11/2007	GLSW-2	6.1	0.77	6.8	8.5	9.3	0.80	0.40	259

Notes:
Non-detect values reported at the reporting limit.
NA - not applicable
B - Result value is less than the reporting limit, but greater than the method detection limit.
BJ - Estimated value. Result value is less than the reporting limit, but greater than the method detection limit.
J - Estimated value.
R - rejected
U - The analyte was analyzed for, but not detected.
UJ - The analyte was analyzed for, but not detected. Detection limit is estimated.
°C - degrees Celsius
ft - feet
mg/L - milligrams per kilogram
ms/cm - millisiemens per centimeter
NTU - Nephelometric Turbidity Units
SU - Standard Units

Table B-10
Lowland Soil TAL Metals and Cyanide Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval	Aluminum (mg/kg)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Calcium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Cyanide (mg/kg)	Iron (mg/kg)
DePue Lake															
LL1-1	8/23/2006	LL1-10-05	0-0.5	13,700	9.6 UJ	7.4	176 J	0.75 J	2.6	45,200	44	9.6	54	4.1 U	25,200
LL1-1	8/23/2006	LL1-105-20	0.5-2	11,300	8.9 UJ	6.1	141 J	0.61 J	2.4	41,900	37	8.0	45	3.7 U	20,700
LL1-2	8/23/2006	LL1-20-05	0-0.5	13,400	8.3 UJ	7.1	160 J	0.73	2.0 J	37,000	40 J	9.5	48	NA	24,200
LL1-2	8/23/2006	LL1-205-20	0.5-2	13,800	8.7 UJ	8.1	158 J	0.73	2.5 J	34,400	42 J	9.0	47	NA	23,800
LL1-2	8/23/2006	LLDUP-8	0.5-2	14,100	8.4 UJ	7.5	158 J	0.74	2.0 J	30,700	40 J	9.6	41	NA	24,700
LL1-3	8/23/2006	LL1-30-05	0-0.5	16,900	8.3 UJ	8.0	170 J	0.87	2.4 J	19,600	43 J	9.8	47	NA	27,300
LL1-3	8/23/2006	LL1-305-20	0.5-2	15,600	8.3 UJ	10	271 J	0.89	7.5	15,200	75	9.0	68	NA	26,500 J
LL1-4	8/23/2006	LL1-40-05	0-0.5	15,600	7.9 UJ	7.7	170 J	0.83	3.2	16,600	46	9.4	52	NA	26,000 J
LL1-4	8/23/2006	LL1-405-20	0.5-2	15,900	8.3 UJ	19	275 J	0.92	6.6	13,800	74	11 J	67	NA	30,500 J
LL2-1	8/23/2006	LL2-10-05	0-0.5	19,500	8.6 UJ	9.4	312 J	0.98	7.3 J	19,300	43 J	12	50	NA	30,700
LL2-1	8/23/2006	LL2-105-20	0.5-2	12,400	8.2 UJ	9.0	326 J	0.67 J	7.4 J	28,700	32 J	8.0	39	NA	21,600
LL2-2	8/23/2006	LL2-20-05	0-0.5	10,200	9.2 UJ	13	484 J	0.58 J	7.3 J	27,800	19 J	7.0 J	29	NA	20,900
LL2-2	8/23/2006	LL2-205-20	0.5-2	6,480	8.0 UJ	24	396 J	0.50 J	1.7 J	17,800	23 J	13	35	NA	26,400
LL3-1	8/23/2006	LL3-10-05	0-0.5	16,700	8.3 UJ	7.7	219 J	0.95	15 J	15,800	60 J	12	81	NA	27,100
LL3-1	8/23/2006	LL3-105-20	0.5-2	18,300	8.6 UJ	12	538 J	0.99	11 J	10,400	72 J	12	77	NA	29,400
LL3-2	8/23/2006	LL3-20-05	0-0.5	19,000	8.1 UJ	7.9	180 J	0.97	5.6 J	12,700	51 J	11	69	NA	27,500
LL3-2	8/23/2006	LL3-205-20	0.5-2	20,900	8.5 UJ	12	323 J	1.1	16 J	10,400	59 J	11	65	NA	30,200
LL3-2	8/23/2006	LLDUP-7	0.5-2	19,500	8.5 UJ	10	315 J	1.1	20 J	15,400	86 J	14	86	NA	30,200
LL3-3	8/23/2006	LL3-30-05	0-0.5	19,600	7.8 UJ	8.1	193 J	0.98	5.5 J	15,000	49 J	11	62	NA	29,000
LL3-3	8/23/2006	LL3-305-20	0.5-2	20,400	8.3 UJ	9.5	384 J	1.0	7.7 J	10,400	65 J	8.7	65	NA	28,700
LL3-4	8/23/2006	LL3-40-05	0-0.5	19,600	9.0 UJ	9.2	192 J	0.98	5.6 J	18,400	49 J	11	65	NA	30,200
LL3-4	8/23/2006	LL3-405-20	0.5-2	19,100	9.6 UJ	16	370 J	0.99	7.4 J	12,200	54 J	11	57	NA	30,400
LL4-1	8/24/2006	LL4-10-05	0-0.5	15,800	7.9 UJ	7.5	247 J	0.81	7.7	18,300	37	10 J	67	NA	25,200 J
LL4-1	8/24/2006	LL4-105-20	0.5-2	16,200	8.3 UJ	11	805 J	0.94	34	16,600	70	14 J	78	NA	27,700 J
LL4-2	8/24/2006	LL4-20-05	0-0.5	11,900	7.8 UJ	6.5	488 J	0.63 J	10	17,900	24	9.8 J	44	NA	19,300 J
LL4-2	8/24/2006	LL4-205-20	0.5-2	8,960	7.3 UJ	7.6	1,890 J	0.54 J	17	21,000	20	7.4 J	72	NA	16,200 J
LL4-3	8/24/2006	LL4-30-05	0-0.5	4,990	7.1 UJ	4.2	380 J	0.29 J	5.2	24,400	9.8	5.1 J	17	3.0 U	9,870
LL4-3	8/24/2006	LL4-305-20	0.5-2	4,930	7.2 UJ	5.1	1,230 J	0.31 J	13	22,900	9.0	5.3 J	24	3.1 U	10,000
LL5-1	8/24/2006	LL5-10-05	0-0.5	19,700	10 UJ	8.5	453 J	1.0	13	12,100	53	11	92	4.2 U	28,400
LL5-1	8/24/2006	LL5-105-20	0.5-2	12,800	9.3 UJ	11	431 J	0.71 J	5.9	17,400	26	7.6 J	39	3.9 U	21,000
LL5-2	8/24/2006	LL5-20-05	0-0.5	13,700	9.6 UJ	9.7	769 J	0.77 J	16	12,300	37	8.4 J	54	NA	23,500 J
LL5-2	8/24/2006	LL5-205-20	0.5-2	12,200	9.1 UJ	9.7	1,280 J	0.71 J	8.8	7,410	35	6.2 J	43	NA	23,000 J
LL5-3	8/24/2006	LL5-30-05	0-0.5	14,400	14 UJ	28	1,180 J	0.81 J	26	30,200	29	11 J	99	NA	36,400 J
LL5-3	8/24/2006	LL5-305-20	0.5-2	9,010	9.4 UJ	23	565 J	0.60 J	2.8	16,600	16	10 J	17	NA	42,800 J

See Notes on Page 10.

Table B-10
Lowland Soil TAL Metals and Cyanide Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval	Aluminum (mg/kg)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Calcium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Cyanide (mg/kg)	Iron (mg/kg)
LL6-1	8/17/2006	LL6-10-05	0-0.5	10,600	12 UJ	20 J	1,260 J	0.70 J	41	60,200 J	23 J	8.8 J	165	NA	50,000 J
LL6-1	8/17/2006	LL6-105-20	0.5-2	6,430	11 UJ	10 J	409	0.38 J	2.9	175,000 JD	11 J	7.5 J	15	NA	50,900 J
LL6-2	8/17/2006	LL6-20-05	0-0.5	12,800	12 UJ	24 J	2,790 J	1.0	131	29,800 J	29 J	12 J	221	NA	32,200 J
LL6-2	8/17/2006	LL6-205-20	0.5-2	13,100	1.0 J	18	2,870	0.93	94	22,600	23	8.3 J	109	NA	43,100
LL6-3	8/17/2006	LL6-30-05	0-0.5	12,000	0.78 J	23	2,400	0.73	76	69,800	20	8.9 J	165	NA	36,600
LL6-3	8/17/2006	LL6-305-20	0.5-2	12,100	0.84 J	7.6	347	0.70 J	5.6	56,500	20	7.7 J	29	NA	32,500
LL6-3	8/17/2006	LLDUP-2	0.5-2	11,400	0.67 J	8.6	509	0.64 J	13	75,100	18	7.3 J	34	NA	32,900
LL7-1	8/17/2006	LL7-10-05	0-0.5	9,980	R	390	8,000	0.85	2,490	18,800	27	19 J	2,240	NA	48,500
LL7-1	8/17/2006	LL7-105-20	0.5-2	14,500	R	108	4,310	0.94	711	15,500	56	36 J	1,840	NA	51,000
LL7-2	8/17/2006	LL7-20-05	0-0.5	8,260	5.8 JD	73 J	986 J	0.69 J	762	16,500	19 UJ	16	812 J	2.6 J	26,300 J
LL7-2	8/17/2006	LL7-205-20	0.5-2	10,700	890 UJD	227 J	3,200 J	0.83 J	2,000	15,100	32 UJ	29	3,580 J	32	64,900 J
LL7-2	8/17/2006	LLDUP-3	0.5-2	12,200	R	224	3,010	0.83 J	1,870	15,600	34	28 J	3,430	NA	66,300
LL7-3	8/17/2006	LL7-30-05	0-0.5	13,600	R	29 J	698 J	0.82 J	199 J	94,500 J	28 J	11 J	425 J	NA	27,700 J
LL7-3	8/17/2006	LL7-305-20	0.5-2	11,300	2.7 JD	80	870	0.69 J	174	61,800	26	15 J	815	NA	35,800
LL7-4	8/17/2006	LL7-40-05	0-0.5	7,480	1.5 J	21 J	725 J	0.56 J	126	48,300	20 UJ	7.5 J	309 J	0.94 J	19,100 J
LL7-4	8/17/2006	LL7-405-20	0.5-2	5,800	5.7 J	62 J	1,360 J	0.60 J	178	30,900	16 UJ	11 J	871 J	9.3 U	36,800 J
LL8-1	10/10/2007	LL08-01 0-0.5	0-0.5	10,900	20 UJ	20 J	549	0.68 J	309	28,900	29	17	517 J	NA	24,100
LL8-1	10/10/2007	LL08-01 0.5-1.8	0.5-1.8	12,000	14 UJ	15 J	2,100	0.79 J	79	23,200	34	12 J	236 J	NA	25,200
LL8-2	8/17/2006	LL8-20-06	0-0.6	13,200	16 U	16	895	0.87 J	79	23,800	37	18 J	224	NA	32,500
LL8-3	8/17/2006	LL8-30-05	0-0.5	9,000	18 UJ	5.4 J	295 J	0.56 J	37	29,600 J	19 J	18 J	146	NA	18,000 J
LL9-1	8/17/2006	LL9-10-05	0-0.5	10,400	6.5 U	49	936	0.84	89	14,800	35	12	317 J	NA	34,200
LL9-1	8/17/2006	LL9-105-20	0.5-2	2,820	6.0 U	1.3	64	0.15 J	6.0	7,290	6.0	2.1 J	65	NA	4,340
LL9-2	8/17/2006	LL9-20-05	0-0.5	28,600	19 U	46	2,000	1.7	94	115,000	72	26 J	451	NA	54,400
LL9-2	8/17/2006	LL9-205-20	0.5-2	13,700	11 U	37	1,090	1.8	73	12,600	29	8.2 J	172	NA	30,000
LL10-1	8/24/2006	LL10-10-05	0-0.5	14,500	8.5 UJ	11	818 J	0.75	50	35,400	36	20	1,510 D	0.48 J	21,500
LL10-1	8/24/2006	LL10-105-20	0.5-2	17,400	8.6 UJ	9.9	490 J	0.82	87	24,700	60	24	460	0.54 J	24,100
LL10-2	8/17/2006	LL10-20-05	0-0.5	11,800	16 U	8.2	1,790	0.79 J	97	32,200	35	17 J	190	NA	21,100
LL10-2	8/17/2006	LL10-205-20	0.5-2	2,610	23 U	39	972	0.31 J	46	122,000	14	6.0 J	32	NA	24,600
LL10-3	8/17/2006	LL10-30-05	0-0.5	4,080	5.7 U	7.7	983	0.26 J	14	10,800	8.3	4.2 J	30	NA	13,800
LL10-3	8/17/2006	LL10-305-20	0.5-2	6,680	7.3 U	4.9	102	0.44 J	1.6	8,160	11	4.2 J	13	NA	11,200
LL10-4	8/17/2006	LL10-40-05	0-0.5	10,200	16 U	34	3,230	0.94 J	113	57,700	20	15	234 J	NA	47,800
LL10-4	8/17/2006	LL10-405-20	0.5-2	6,730	10 J	36	3,910	1.0	60	108,000	12	7.4 J	132	NA	27,900
LL10-5	8/17/2006	LL10-50-05	0-0.5	3,280	19 U	8.7	2,010	0.20 J	53	160,000	7.1	5.3 J	72	NA	184,000
LL10-5	8/17/2006	LL10-505-20	0.5-2	2,480	27 U	52	1,450	0.26 J	34	73,800	3.9 J	13 J	37 J	NA	35,100
LL11-1	8/24/2006	LL11-10-05	0-0.5	18,700	9.2 UJ	9.3	257 J	0.96	56	17,900	42	33 J	1,080	NA	27,300 J
LL11-1	8/24/2006	LL11-105-20	0.5-2	19,200	9.8 UJ	13	328 J	0.94	47	17,600	63	21 J	313	NA	27,500 J
LL11-2	8/24/2006	LL11-20-05	0-0.5	4,290	6.7 UJ	6.9	43 J	0.37 J	3.1	44,500	8.4	8.6 J	89	NA	18,400 J
LL11-2	8/24/2006	LL11-205-20	0.5-2	7,660	R	6.9	107 J	0.50 J	54	44,400	16	17 J	4,190 D	NA	17,900 J
LL11-2	8/24/2006	LLDUP-9	0.5-2	8,150	R	7.2	203 J	0.57 J	128	31,800	16	26 J	8,960 D	NA	19,100 J
LL11-3	8/17/2006	LL11-30-05	0-0.5	7,070	16 U	14	1,460	0.40 J	40	108,000	25	38	89 J	NA	71,700
LL11-3	8/17/2006	LL11-305-20	0.5-2	5,420	17 U	16	1,290	0.37 J	41	108,000	18	37	79 J	NA	70,400
LL11-4	8/24/2006	LL11-40-05	0-0.5	2,130	20 UJ	18	2,270 J	0.26 J	37	160,000	4.9	12 J	46	NA	58,800 J
LL11-5	8/17/2006	LL11-50-05	0-0.5	9,140	7.7 U	9.4	226	0.45 J	28	10,900	14	7.3	73 J	NA	16,200
LL11-5	8/17/2006	LL11-505-20	0.5-2	5,550	8.2 U	8.3	1,050	0.36 J	37	24,600	11	5.8 J	52 J	NA	14,900

See Notes on Page 10.

Table B-10
Lowland Soil TAL Metals and Cyanide Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval	Aluminum (mg/kg)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Calcium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Cyanide (mg/kg)	Iron (mg/kg)
LL12-1	8/17/2006	LL12-10-05	0-0.5	19,000	8.7 U	9.4	207	0.95	30	17,800	41	19	605 J	NA	27,800
LL12-1	8/17/2006	LL12-105-20	0.5-2	19,900	9.0 U	11	271	0.99	26	18,400	59	16 J	440	NA	28,200
LL12-2	8/17/2006	LL12-20-05	0-0.5	17,600	36 UJD	11 J	359 J	0.97	41	22,100	40 J	22	2,120 J	3.5 U	28,500 J
LL12-2	8/17/2006	LL12-205-20	0.5-2	16,400	37 UJD	14 J	819 J	0.85	64	27,000	48 J	18	489 J	0.26 J	26,800 J
LL12-3	8/17/2006	LL12-30-05	0-0.5	15,800	R	15	280 J	0.92	168 J	24,900 J	28	29 J	8,310	NA	27,500 J
LL12-3	8/17/2006	LL12-305-20	0.5-2	18,500	7.6 UJ	20	643 J	0.86	162 J	34,600 J	53	96 J	838	NA	27,300 J
LL12-4	8/17/2006	LL12-40-05	0-0.5	16,300	8.0 UJ	7.7	191 J	0.79	15 J	20,100 J	31	27 J	1,250	NA	23,500 J
LL12-4	8/17/2006	LL12-405-20	0.5-2	20,800	9.6 UJ	10	360 J	1.1	67 J	36,600 J	52	13	496	NA	27,300 J
LL12-5	8/17/2006	LL12-50-05	0-0.5	17,700	R	22	730	0.89	121	33,000	37	19 J	1,990 J	NA	35,000
LL12-5	8/17/2006	LL12-505-20	0.5-2	3,780	2.3 J	23	1,180	0.30 J	22	213,000 D	8.4	13 J	44 J	NA	108,000
LL12-5	8/17/2006	LLDUP-1	0.5-2	5,020	2.3 J	34	1,520	0.36 J	51	197,000 D	12	14 J	177 J	NA	100,000
LL13-1	8/16/2006	LL13-10-05	0-0.5	20,300	0.62 J	6.9	205	1.0	23	20,200	49	17 J	642	NA	28,900
LL13-1	8/16/2006	LL13-105-20	0.5-2	21,000	R	8.8	229	1.0	37	12,600	54	13 J	125	NA	29,000
LL13-2	8/16/2006	LL13-20-05	0-0.5	20,700	R	10	374	0.97	59	18,400	49	24 J	484	NA	29,500
LL13-2	8/16/2006	LL13-205-20	0.5-2	15,900	R	20	768	0.95	110	7,900	36	131 J	332	NA	37,200
LL13-3	8/16/2006	LL13-30-05	0-0.5	18,800	R	7.0	175	0.91	91	20,500	34	103 J	1,650	NA	26,100
LL13-3	8/16/2006	LL13-305-20	0.5-2	16,300	R	22	2,700	1.3	842	7,990	33	67 J	905	NA	32,800
LL13-4	8/16/2006	LL13-40-05	0-0.5	20,000	R	21	1,590	1.1	119	15,900	43	26 J	1,070	NA	43,600
LL13-4	8/16/2006	LL13-405-20	0.5-2	12,600	R	45	3,230	1.6	387	78,000	16	53 J	1,870	NA	87,100
LL14-1	8/16/2006	LL14-10-05	0-0.5	21,300	7.0 UJ	8.5	185 J	0.99	11 J	16,600 J	40	18	69	3.6 U	29,300 J
LL14-1	8/16/2006	LL14-105-20	0.5-2	20,600	7.9 UJ	7.5	848 J	1.0	29 J	14,000 J	60	14	104	3.9 U	26,600
LL14-2	8/16/2006	LL14-20-05	0-0.5	22,100	9.1 UJ	7.7	239 J	1.0	12 J	15,600 J	38	16	73	NA	28,100 J
LL14-2	8/16/2006	LL14-205-20	0.5-2	22,100	7.8 UJ	14	844 J	1.1	27 J	11,800 J	56	17	88	NA	33,500 J
LL14-3	8/16/2006	LL14-30-05	0-0.5	21,500	7.7 UJ	7.5	194 J	0.97	8.5 J	18,500 J	37	12	76	NA	27,400 J
LL14-3	8/16/2006	LL14-305-20	0.5-2	18,800	9.5 UJ	16	1,160 J	0.97	32 J	20,200 J	36	10	70	NA	38,000 J
LL14-4	8/16/2006	LL14-40-05	0-0.5	20,800	9.5 UJ	10	553 J	0.97	26 J	32,500 J	32	10	53	NA	36,900 J
LL14-4	8/16/2006	LL14-405-20	0.5-2	4,600	14 UJ	17	1,910 J	0.34 J	9.7 J	185,000 J	7.4	12 U	20	NA	92,400 J
LL15-1	8/16/2006	LL15-10-05	0-0.5	16,800	6.4 UJ	6.2	145 J	0.81	4.1 J	17,800 J	37	10	59	NA	23,800 J
LL15-1	8/16/2006	LL15-105-20	0.5-2	21,800	8.1 UJ	8.6	227 J	1.0	11 J	12,600 J	50	9.6 J	53	NA	27,900 J
LL15-2	8/16/2006	LL15-20-05	0-0.5	21,700	7.1 UJ	8.4	195 J	0.99	4.5 J	14,300 J	42	9.1 J	48	NA	27,700 J
LL15-2	8/16/2006	LL15-205-20	0.5-2	15,200	7.0 UJ	10	508 J	0.76	19 J	12,100 J	37	8.5 J	51	NA	22,100 J
LL15-3	8/16/2006	LL15-30-05	0-0.5	19,600	7.9 UJ	7.3	216 J	0.91	10 J	16,900 J	39	11 J	59	NA	28,100 J
LL15-3	8/16/2006	LL15-305-20	0.5-2	20,300	7.5 UJ	11	540 J	1.0	15 J	15,300 J	50	9.7 J	70	NA	36,400 J
LL15-4	8/16/2006	LL15-40-05	0-0.5	11,700	10 UJ	12	385 J	0.60 J	26 J	44,600 J	25	11 J	32	NA	33,100 J
LL15-4	8/16/2006	LL15-405-20	0.5-2	18,900	9.8 UJ	12	1,150 J	0.97	26 J	41,400 J	36	7.6 J	70	NA	37,600 J
LL16-1	8/22/2006	LL16-10-05	0-0.5	14,200	8.3 UJ	7.4	158 J	0.75	5.1	31,500	39 J	10 J	77	NA	24,500
LL16-1	8/22/2006	LL16-105-20	0.5-2	17,500	8.2 UJ	9.0	161 J	0.89	5.4	19,400	54 J	10 J	71	NA	27,100
LL16-2	8/22/2006	LL16-20-05	0-0.5	15,200	8.5 UJ	7.5	174 J	0.79	3.9	27,900	43	9.5	54	3.6 U	24,400
LL16-2	8/22/2006	LLDUP-5	0-0.5	14,700	8.7 UJ	7.8	174	0.75	3.6	29,300	42 J	8.6 J	55	NA	25,500
LL16-2	8/22/2006	LL16-205-20	0.5-2	16,800	8.9 UJ	10	201 J	0.87	4.4	21,100	54	9.9	62	3.7 U	29,000
LL16-2	8/22/2006	LLDUP-6	0.5-2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.6 U	NA
LL16-3	8/22/2006	LL16-30-05	0-0.5	12,800	8.4 UJ	7.1	166 J	0.70 J	3.2	27,100	39 J	8.9 J	45	NA	22,600
LL16-3	8/22/2006	LL16-305-20	0.5-2	14,500	8.1 UJ	8.2	183 J	0.78	5.2	22,000	54 J	8.7 J	59	NA	24,200
LL17-1	8/22/2006	LL17-10-05	0-0.5	13,300	1.3 JN	7.1	144	0.72	2.5 J	26,700 J	44 J	7.9	49 J	NA	23,000 J
LL17-1	8/22/2006	LL17-105-20	0.5-2	12,000	1.5 JN	9.2	202	0.74	7.4 J	24,200 J	68 J	8.0	67 J	NA	22,800 J

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Table B-10
Lowland Soil TAL Metals and Cyanide Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval	Aluminum (mg/kg)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Calcium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Cyanide (mg/kg)	Iron (mg/kg)
LL17-2	8/22/2006	LL17-20-05	0-0.5	13,600	1.4 JN	7.4	155	0.75	2.6 J	25,100 J	46 J	8.4	52 J	NA	23,800 J
LL17-2	8/22/2006	LL17-205-20	0.5-2	14,700	7.3 UJ	9.9	225 J	0.90	11 J	21,700 J	86 J	9.0 J	81	NA	25,200 J
LL17-3	8/22/2006	LL17-30-05	0-0.5	14,100	7.5 UJ	7.5	154 J	0.76	2.1 J	25,600 J	44 J	8.5 J	50	NA	24,200 J
LL17-3	8/22/2006	LL17-305-20	0.5-2	15,100	7.6 UJ	7.9	165 J	0.82	3.8 J	24,200 J	58 J	8.5 J	65	NA	25,200 J
LL17-4	8/22/2006	LL17-40-05	0-0.5	13,300	7.9 UJ	6.7	142 J	0.72	2.2 J	24,500 J	39 J	8.3 J	44	NA	23,400 J
LL17-4	8/22/2006	LL17-405-20	0.5-2	14,400	8.1 UJ	8.5	194 J	0.85	7.7 J	23,100 J	93 J	9.7 J	76	NA	25,100 J
LL17-5	8/22/2006	LL17-50-05	0-0.5	13,300	8.3 UJ	6.7	137	0.72	1.9 J	28,500 J	36 J	8.2 J	42	NA	23,200 J
LL17-5	8/22/2006	LL17-505-20	0.5-2	15,700	8.3 UJ	8.4	164	0.85	4.5 J	21,800 J	50 J	9.9 J	62	NA	25,700 J
LL17-6	8/22/2006	LL17-60-05	0-0.5	16,700	8.9 UJ	7.1	153	0.88	4.8 J	21,800 J	53 J	9.0 J	68	NA	25,800 J
LL17-6	8/22/2006	LL17-605-20	0.5-2	16,200	8.3 UJ	6.9	151	0.85	4.0 J	17,600 J	54 J	9.1 J	74	NA	25,400 J
LL17-7	8/22/2006	LL17-70-05	0-0.5	17,100	8.2 UJ	6.7	138	0.90	3.7 J	17,900 J	44 J	8.1 J	53	NA	25,100 J
LL17-7	8/22/2006	LL17-705-20	0.5-2	16,300	8.5 UJ	13	343	0.89	9.8 J	13,500 J	48 J	10 J	49	NA	28,900 J
LL18-1	8/21/2006	LL18-10-05	0-0.5	18,100	7.5 UJ	8.0 J	174 J	0.91	4.5	18,300 J	45 J	10 J	58	NA	26,500 J
LL18-1	8/21/2006	LL18-105-20	0.5-2	18,600	7.5 UJ	9.0 J	217 J	0.98	8.5	14,400 J	72 J	9.9 J	73	NA	27,200 J
LL18-1	8/21/2006	LLDUP-4	0.5-2	19,500	7.5 UJ	8.2 J	178 J	0.99	5.9	15,100 J	61 J	9.5 J	74	NA	27,500 J
LL18-2	8/21/2006	LL18-20-05	0-0.5	17,000	8.1 UJ	7.2 J	155 J	0.89	3.4	15,800 J	41 J	9.4 J	52	NA	26,400 J
LL18-2	8/21/2006	LL18-205-20	0.5-2	18,400	7.4 UJ	13 J	283 J	0.97	8.1	11,900 J	94 J	9.1 J	91	NA	27,900 J
LL18-3	8/21/2006	LL18-30-05	0-0.5	16,600	8.1 UJ	8.5 J	206 J	0.89	8.9	15,100 J	56 J	9.1 J	63	NA	25,300 J
LL18-3	8/21/2006	LL18-305-20	0.5-2	18,100	8.0 UJ	12 J	237 J	0.98	5.6	13,800 J	73 J	10 J	74	NA	28,300 J
LL18-4	8/22/2006	LL18-40-05	0-0.5	11,200	6.9 UJ	7.1	146 J	0.64	4.3	28,700	55 J	7.8 J	61	NA	21,500
LL18-4	8/22/2006	LL18-405-20	0.5-2	13,600	7.5 UJ	9.0	197 J	0.86	9.5	23,000	91 J	9.3 J	80	NA	24,500
LL19-1	8/21/2006	LL19-10-05	0-0.5	19,100	8.1 UJ	7.8 J	175 J	0.98	4.5	18,200 J	49 J	12 J	60	NA	29,100 J
LL19-1	8/21/2006	LL19-105-20	0.5-2	20,900	8.3 UJ	9.2 J	199 J	1.0	7.0	13,200 J	67 J	9.6 J	65	NA	28,500 J
LL19-2	8/21/2006	LL19-20-05	0-0.5	17,000	8.0 UJ	7.1 J	146 J	0.88	2.8	24,600 J	44 J	9.3 J	53	NA	26,200 J
LL19-2	8/21/2006	LL19-205-20	0.5-2	19,800	8.5 UJ	9.0 J	176 J	1.0	3.5	18,800 J	50 J	9.4 J	55	NA	29,100 J
LL19-3	8/21/2006	LL19-30-05	0-0.5	15,000	7.6 UJ	8.2 J	160 J	0.79	2.4	27,200 J	45 J	9.0 J	52	NA	25,900 J
LL19-3	8/21/2006	LL19-305-20	0.5-2	17,200	7.7 U	8.5 J	198 J	0.91	5.8	20,200 J	83 J	9.7 J	75	NA	26,800 J
LL19-4	8/21/2006	LL19-40-05	0-0.5	15,500	8.0 UJ	7.0 J	152 J	0.82	2.5	24,700 J	50 J	8.3 J	54	NA	25,200 J
LL19-4	8/21/2006	LL19-405-20	0.5-2	17,800	8.0 UJ	8.7 J	197 J	0.94	6.0	19,900 J	78 J	9.8 J	73	NA	27,400 J
LL19-5	8/22/2006	LL19-50-05	0-0.5	13,800	8.4 UJ	7.5	149 J	0.73	2.4	28,600	39 J	8.7 J	45	NA	24,500
LL19-5	8/22/2006	LL19-505-20	0.5-2	17,400	8.0 UJ	9.7	195 J	0.92	5.6	19,300	72 J	10 J	69	NA	28,000
LL19-6	8/22/2006	LL19-60-05	0-0.5	12,300	6.9 UJ	7.2	145 J	0.67	2.4	30,600	46 J	8.1 J	45	NA	22,900
LL19-6	8/22/2006	LL19-605-20	0.5-2	14,300	7.4 UJ	8.7	192 J	0.82	6.4	24,500	76 J	9.4 J	70	NA	25,200
LL20-1	8/21/2006	LL20-10-05	0-0.5	16,100	7.6 UJ	7.6 J	164 J	0.86	2.4	23,900 J	44 J	9.8 J	51	NA	27,200 J
LL20-1	8/21/2006	LL20-105-20	0.5-2	19,400	8.5 UJ	8.9	186	0.99	4.3	16,000	59 J	9.6 J	62	NA	28,700
LL20-2	8/21/2006	LL20-20-05	0-0.5	15,900	7.7 UJ	8.0	162	0.84	2.1	24,100	41 J	9.9 J	47	NA	26,800
LL20-2	8/21/2006	LL20-205-20	0.5-2	16,900	7.5 UJ	8.0	191	0.89	7.5	14,500	73 J	9.4 J	65	NA	25,500
LL20-3	8/21/2006	LL20-30-05	0-0.5	17,600	8.4 UJ	7.4	164	0.88	2.4	23,800	43 J	9.1 J	47	NA	26,900
LL20-3	8/21/2006	LL20-305-20	0.5-2	17,300	8.3 UJ	9.9	196	0.88	3.5	24,500	57 J	9.8 J	60	NA	28,400
LL20-4	8/21/2006	LL20-40-05	0-0.5	15,300	8.0 UJ	6.9	156	0.79	2.3	27,900	44 J	8.5 J	49	NA	25,600
LL20-4	8/21/2006	LL20-405-20	0.5-2	17,600	7.5 UJ	8.3	166	0.88	3.9	17,600	56 J	8.6 J	61	NA	26,800
LL20-5	8/22/2006	LL20-50-05	0-0.5	11,800	6.9 UJ	7.0	140	0.65	2.1	33,000	39 J	8.0 J	44	NA	22,500
LL20-5	8/22/2006	LL20-505-20	0.5-2	13,800	7.2 UJ	8.3	182	0.82	7.1	25,800	78 J	8.9 J	72	NA	24,500
LL21-1	8/22/2006	LL21-10-05	0-0.5	16,100	7.7 UJ	8.0	168 J	0.86	1.8 J	18,300 J	42 J	9.7 J	46	NA	27,500 J
LL21-1	8/22/2006	LL21-105-20	0.5-2	14,800	8.4 UJ	10	218 J	0.87	3.5 J	11,800 J	41 J	10 J	43	NA	29,000 J

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Table B-10
Lowland Soil TAL Metals and Cyanide Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval	Aluminum (mg/kg)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Calcium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Cyanide (mg/kg)	Iron (mg/kg)
LL21-2	8/22/2006	LL21-20-05	0-0.5	14,100	8.3 UJ	5.5	139 J	0.76	1.5 J	20,200 J	37 J	8.6 J	42	NA	24,300 J
LL21-2	8/22/2006	LL21-205-20	0.5-2	16,900	8.5 UJ	8.7	202 J	0.96	6.3 J	13,500 J	78 J	8.7 J	66	NA	27,300 J
LL21-3	8/22/2006	LL21-30-05	0-0.5	13,700	8.0 UJ	7.5	153 J	0.74	1.8 J	28,400 J	41 J	8.9 J	46	NA	24,600 J
LL21-3	8/22/2006	LL21-305-20	0.5-2	16,400	8.0 UJ	7.7	155 J	0.85	3.1 J	21,600 J	53 J	8.5 J	60	NA	26,000 J
Goose Lake															
GLBF-01	9/27/2006	GLBF-01-0-0.5	0-0.5	11,300	9.3 UJ	22	145 J	0.68 J	1.5	17,500	22	10	25	3.9 U	29,100 J
GLBF-01	9/27/2006	GLBF-01-0.5-2.0	0.5-2	11,800	8.7 UJ	11	117 J	0.68 J	1.7	8,700	24	9.1	27	4.0 U	25,700 J
GLBF-02	9/27/2006	GLBF-02-0-0.5	0-0.5	13,100	7.1 UJ	7.6	98 J	0.70	1.2	8,500	24	7.4	27	3.1 U	21,500 J
GLBF-02	9/27/2006	GLBF-02-0.5-2.0	0.5-2	12,300	8.8 UJ	7.8	136 J	0.71 J	0.99	15,800	20	10	24	3.8 U	26,000 J
GLBF-03	9/26/2006	GLBF-03-0-0.5	0-0.5	10,600	6.9 UJ	10	75 J	0.68	0.91	2,190	19	11	21	3.0 U	28,700 J
GLBF-03	9/26/2006	GLBF-03-0.5-2.0	0.5-2	11,000	7.3 UJ	10	83 J	0.72	0.93	2,360	20	13	21	3.1 U	29,000 J
GLBF-04	9/26/2006	GLBF-04-0-0.5	0-0.5	7,450	6.5 UJ	4.1	82 J	0.45 J	0.52 J	1,890	11	7.2	12	2.9 U	14,500 J
GLBF-04	9/26/2006	GLBF-04-0.5-2.0	0.5-2	9,200	6.9 UJ	3.9	89 J	0.48 J	0.57	1,880	13	8.0	14	2.9 U	15,000 J
GLBF-04	9/27/2006	GLBF-DUP-1	0.5-2	9,390	6.9 UJ	4.2	89 J	0.50 J	0.57 J	1,950	14	8.4	14	2.9 U	15,800 J
GLBF-05	9/26/2006	GLBF-05-0-0.5	0-0.5	18,700	10 UJ	9.3	192 J	0.96	1.6	15,100	30	11	36	0.87 J	28,400 J
GLBF-05	9/27/2006	GLBF-05-0.5-2.0	0.5-2	16,900 J	9.2 U	15 J	206 J	0.84	1.3	13,700	25	9.9 J	28	3.8 U	29,600 J
GLBF-06	9/26/2006	GLBF-06-0-0.5	0-0.5	16,900	10 UJ	7.1	161 J	0.82 J	0.97	17,700	24	8.6	27	4.4 U	24,300 J
GLBF-06	9/26/2006	GLBF-06-0.5-2.0	0.5-2	16,500	8.8 UJ	5.9	169 J	0.80	1.4	15,100	28	8.4	31	4.0 U	22,400 J
GLBF-06	9/27/2006	GLBF-DUP-2	0.5-2	16,900 J	9.5 UJ	6.3 J	192 J	0.82	1.3	15,100	28	8.6 J	31	4.1 U	24,000 J
GLBF-07	9/26/2006	GLBF-07-0-0.5	0-0.5	15,200	8.5 UJ	8.7	167 J	0.74	1.4	14,800	24	9.5	27	3.7 U	24,400 J
GLBF-07	9/26/2006	GLBF-07-0.5-2.0	0.5-2	15,700	8.6 UJ	7.1	163 J	0.75	1.0	15,600	23	8.1	26	3.9 U	23,300 J
GLBF-08	9/27/2006	GLBF-08-0-0.5	0-0.5	11,400	8.1 UJ	5.7	138 J	0.62 J	2.6	32,900	32	7.7	43	3.7 U	20,100 J
GLBF-08	9/27/2006	GLBF-08-0.5-2.0	0.5-2	14,100	8.7 UJ	7.9	162 J	0.78	4.6	27,700	50	9.2	55	3.9 U	23,700 J
GLBF-09	9/27/2006	GLBF-09-0-0.5	0-0.5	13,700	9.3 UJ	6.9	161 J	0.72 J	2.8	33,700	35	9.2	46	4.0 U	23,900 J
GLBF-09	9/27/2006	GLBF-09-0.5-2.0	0.5-2	14,200	8.3 UJ	8.7	186 J	0.79	6.3	24,800	69	10	65	3.7 U	23,300 J
GLBF-10	9/27/2006	GLBF-10-0-0.5	0-0.5	13,500	8.8 UJ	6.4	158 J	0.72 J	3.1	31,500	35	9.2	45	3.7 U	23,200 J
GLBF-10	9/27/2006	GLBF-10-0.5-2.0	0.5-2	12,900	8.6 UJ	6.6	154 J	0.69 J	3.6	32,400	42	9.0	52	3.8 U	22,900 J

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Table B-10
Lowland Soil TAL Metals and Cyanide Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval	Lead (mg/kg)	Magnesium (mg/kg)	Manganese (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Potassium (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Sodium (mg/kg)	Thallium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
DePue Lake															
LL1-1	8/23/2006	LL1-10-05	0-0.5	46 J	14,700	908	0.28	29	2,180 J	1.8 J	1.2 J	802 U	4.0 UJ	28 J	245 J
LL1-1	8/23/2006	LL1-105-20	0.5-2	40 J	14,200	646	0.21	25	1,700 J	1.4 J	0.95 J	743 U	3.7 UJ	24 J	234 J
LL1-2	8/23/2006	LL1-20-05	0-0.5	41 J	13,700	819 J	0.21	27 J	2,120	1.6 J	1.1 J	688 U	3.4 UJ	27 J	196 J
LL1-2	8/23/2006	LL1-205-20	0.5-2	44 J	12,300	779 J	0.16	29 J	1,910	1.5 J	1.0 J	725 U	3.6 UJ	28 J	267 J
LL1-2	8/23/2006	LLDUP-8	0.5-2	39 J	11,600	837 J	0.12 J	28 J	1,980	1.8 J	0.86 J	701 U	3.5 UJ	28 J	243 J
LL1-3	8/23/2006	LL1-30-05	0-0.5	43 J	10,500	665 J	0.17	32 J	2,350	2.2 J	0.90 J	690 U	3.5 UJ	33 J	274 J
LL1-3	8/23/2006	LL1-305-20	0.5-2	85 J	8,870	531	0.33	38 J	1,870 J	2.1 J	1.6	688 UJ	3.4 UJ	31 J	485 J
LL1-4	8/23/2006	LL1-40-05	0-0.5	47 J	9,510	572	0.20	35 J	1,990 J	2.1 J	0.88 J	208 J	3.3 UJ	30 J	342 J
LL1-4	8/23/2006	LL1-405-20	0.5-2	96 J	8,380	1,490	0.76	42 J	1,910 J	1.9 J	1.8	232 J	3.4 UJ	33 J	511 J
LL2-1	8/23/2006	LL2-10-05	0-0.5	54 J	10,900	1,040 J	0.099 J	41 J	2,780	1.6 J	0.66 J	713 U	3.6 UJ	37 J	878 J
LL2-1	8/23/2006	LL2-105-20	0.5-2	51 J	15,600	360 J	0.063 J	27 J	1,810	1.5 J	0.49 J	682 U	3.4 UJ	26 J	644 J
LL2-2	8/23/2006	LL2-20-05	0-0.5	61 J	10,200	850 J	0.15 U	20 J	1,430	1.2 J	0.36 J	766 U	3.8 UJ	23 J	924 J
LL2-2	8/23/2006	LL2-205-20	0.5-2	22 J	6,990	2,070 J	0.13 U	23 J	1,230	0.57 J	0.27 J	669 U	3.3 UJ	23 J	153 J
LL3-1	8/23/2006	LL3-10-05	0-0.5	87 J	8,300	456 J	0.17	43 J	2,240	2.3 J	1.3 J	302 J	3.5 UJ	32 J	1,990 J
LL3-1	8/23/2006	LL3-105-20	0.5-2	117 J	6,940	538 J	0.48	36 J	2,270	1.9 J	1.6	285 J	3.6 UJ	36 J	984 J
LL3-2	8/23/2006	LL3-20-05	0-0.5	55 J	7,800	594 J	0.14	41 J	2,390	1.9 J	0.89 J	679 U	3.4 UJ	35 J	780 J
LL3-2	8/23/2006	LL3-205-20	0.5-2	71 J	6,950	1,040 J	0.51	46 J	2,640	1.6 J	1.1 J	708 U	3.5 UJ	40 J	788 J
LL3-2	8/23/2006	LLDUP-7	0.5-2	99 J	8,690	1,130 J	0.55	55 J	2,410	1.6 J	2.0	335 J	3.5 UJ	37 J	1,670 J
LL3-3	8/23/2006	LL3-30-05	0-0.5	52 J	8,660	782 J	0.14	39 J	2,760	1.8 J	0.92 J	287 J	3.3 UJ	37 J	750 J
LL3-3	8/23/2006	LL3-305-20	0.5-2	72 J	7,150	330 J	0.35	41 J	2,370	2.1 J	1.2 J	307 J	3.5 UJ	37 J	688 J
LL3-4	8/23/2006	LL3-40-05	0-0.5	52 J	9,710	651 J	0.15	39 J	2,410	2.0 J	0.90 J	325 J	3.8 UJ	38 J	769 J
LL3-4	8/23/2006	LL3-405-20	0.5-2	76 J	7,380	653 J	0.22	40 J	2,230	2.2 J	1.0 J	372 J	4.0 UJ	37 J	834 J
LL4-1	8/24/2006	LL4-10-05	0-0.5	47 J	9,620	761	0.12 J	31 J	2,170 J	1.8 J	0.67 J	228 J	3.3 UJ	32 J	1,190 J
LL4-1	8/24/2006	LL4-105-20	0.5-2	123 J	8,920	1,200	0.28	42 J	1,950 J	1.9 J	1.9	295 J	3.5 UJ	32 J	1,930 J
LL4-2	8/24/2006	LL4-20-05	0-0.5	65 J	10,100	715	0.058 J	25 J	1,600 J	1.3 J	0.53 J	647 UJ	3.2 UJ	28 J	1,100 J
LL4-2	8/24/2006	LL4-205-20	0.5-2	172 J	11,400	611	0.12 U	18 J	1,200 J	1.1 J	1.2 J	222 J	3.0 UJ	22 J	1,560 J
LL4-3	8/24/2006	LL4-30-05	0-0.5	36 J	12,600	454	0.11 U	11	743 J	0.71 J	0.18 J	592 U	3.0 UJ	15 J	444 J
LL4-3	8/24/2006	LL4-305-20	0.5-2	72 J	12,300	510	0.12 U	11	598 J	0.49 J	0.35 J	599 U	3.0 UJ	15 J	1,050 J
LL5-1	8/24/2006	LL5-10-05	0-0.5	189 J	7,980	407	0.48	35	2,280 J	2.4 J	1.2 J	357 J	4.2 UJ	37 J	1,880 J
LL5-1	8/24/2006	LL5-105-20	0.5-2	108 J	9,950	289	0.41	23 J	1,510 J	1.7 J	0.51 J	772 U	3.9 UJ	30 J	741 J
LL5-2	8/24/2006	LL5-20-05	0-0.5	81 J	5,770	621	0.11 J	28 J	1,540 J	1.9 J	0.84 J	496 J	4.0 UJ	32 J	1,280 J
LL5-2	8/24/2006	LL5-205-20	0.5-2	77 J	4,080	276	0.50	23 J	1,410 J	2.1 J	0.69 J	339 J	3.8 UJ	30 J	994 J
LL5-3	8/24/2006	LL5-30-05	0-0.5	155 J	7,410	787	0.19 J	28 J	1,820 J	3.0 J	1.6 J	440 J	5.7 UJ	35 J	2,480 J
LL5-3	8/24/2006	LL5-305-20	0.5-2	28 J	4,200	536	0.15 U	19 J	1,020 J	2.9 J	0.13 J	785 UJ	3.9 UJ	27 J	294 J

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Table B-10
Lowland Soil TAL Metals and Cyanide Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval	Lead (mg/kg)	Magnesium (mg/kg)	Manganese (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Potassium (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Sodium (mg/kg)	Thallium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
LL6-1	8/17/2006	LL6-10-05	0-0.5	380 J	7,020 J	730 J	0.49	23 J	1,510 J	3.2 J	2.2	968 U	4.8 UJ	30 J	3,400 J
LL6-1	8/17/2006	LL6-105-20	0.5-2	15 J	5,860 J	970 J	0.18 U	14 J	984 J	1.3 J	0.15 J	904 U	4.5 UJ	19 J	208 J
LL6-2	8/17/2006	LL6-20-05	0-0.5	1,000 J	11,200 J	1,600 J	0.80	29 J	1,690 J	4.6 J	6.5	779 J	4.9 UJ	33 J	8,670 J
LL6-2	8/17/2006	LL6-205-20	0.5-2	701 J	7,040	434 J	2.9	26 J	1,860 J	3.7 J	2.1 J	362 J	1.1 J	34	4,850 JD
LL6-3	8/17/2006	LL6-30-05	0-0.5	513 J	7,450	862 J	2.9	21 J	2,100 J	2.6 J	2.5 J	703 UJ	0.58 J	27	5,660 JD
LL6-3	8/17/2006	LL6-305-20	0.5-2	44 J	9,540	505 J	0.13 J	21 J	1,890 J	2.4 J	1.7 UJ	869 UJ	1.1 J	28	394 J
LL6-3	8/17/2006	LLDUP-2	0.5-2	62 J	8,690	521 J	0.21	20 J	1,830 J	2.0 J	0.17 J	635 UJ	3.2 U	26	788 J
LL7-1	8/17/2006	LL7-10-05	0-0.5	12,500 JD	4,580	1,200 J	6.8	26 J	1,080 J	14 J	69 J	4,990 JD	1.1 J	29	150,000 JD
LL7-1	8/17/2006	LL7-105-20	0.5-2	7,660 J	6,010	1,020 J	16 D	28 J	1,770 J	43 J	31 J	8,580 UJD	1.5 J	37	38,500 JD
LL7-2	8/17/2006	LL7-20-05	0-0.5	2,030 J	3,770	873 J	3.9	17 J	1,150 J	5.2 J	9.8 J	16,000 UD	0.98 J	24	44,800 JD
LL7-2	8/17/2006	LL7-205-20	0.5-2	6,890 J	4,190	1,630 J	6.6	23 J	856 J	27	62 J	6,230 JD	2.7 J	31 J	181,000 JD
LL7-2	8/17/2006	LLDUP-3	0.5-2	6,450 J	4,530	1,570 J	4.7	23 J	1,170 J	25 J	61 J	7,150 JD	2.1 J	34	176,000 JD
LL7-3	8/17/2006	LL7-30-05	0-0.5	993 J	14,700 J	1,220 J	0.21 J	29 J	2,020 J	4.4 J	8.3 J	8,870 UJD	8.9 UJ	35 J	21,800 JD
LL7-3	8/17/2006	LL7-305-20	0.5-2	1,370 J	14,900	806 J	0.81	26 J	1,480 J	4.0 J	14 J	5,090 UJD	5.1 U	34	22,100 JD
LL7-4	8/17/2006	LL7-40-05	0-0.5	700 J	12,700	763 J	1.7	17 J	1,100 J	2.6 J	5.9 J	920 U	4.6 U	22 J	8,830 JD
LL7-4	8/17/2006	LL7-405-20	0.5-2	1,360 J	8,920	418 J	0.47	18 J	686 J	7.3 J	14 J	1,860 U	9.3 U	29 J	14,400 JD
LL8-1	10/10/2007	LL08-01 0-0.5	0-0.5	552	6,750	461	4.4 J	29	1,300 J	2.7 J	4.6	1,630 U	1.6 J	24	14,900
LL8-1	10/10/2007	LL08-01 0.5-1.8	0.5-1.8	676	7,160	240	3.5 J	26	1,530 J	1.4 J	3.1	1,180 U	2.1 J	27	5,660
LL8-2	8/17/2006	LL8-20-06	0-0.6	254	6,940	363	0.56	35	1,800 J	4.6 J	1.7 J	1,000 J	6.7 U	35	6,270
LL8-3	8/17/2006	LL8-30-05	0-0.5	105 J	6,450 J	702 J	0.19 J	29 J	1,170 J	2.9 J	0.58 J	1,110 J	7.5 UJ	27 J	5,310 J
LL9-1	8/17/2006	LL9-10-05	0-0.5	2,280	5,640	1,730	2.0	27	1,350 J	3.2 J	14	1,170	2.7 U	27	17,000
LL9-1	8/17/2006	LL9-105-20	0.5-2	22	1,640	29	4.1	6.0	318 J	0.64 J	0.14 J	411 J	2.5 U	6.3	1,010
LL9-2	8/17/2006	LL9-20-05	0-0.5	1,710	33,000	1,500	0.53	65	3,450 J	6.9 J	8.8	1,680	8.0 U	65	9,430
LL9-2	8/17/2006	LL9-205-20	0.5-2	2,370	4,510	451	0.45	30	1,220 J	3.3 J	5.0	2,030	4.4 U	35	21,700
LL10-1	8/24/2006	LL10-10-05	0-0.5	212 J	15,100	912	0.65	34	2,130 J	1.5 J	1.6	1,320	3.5 UJ	30 J	12,600 JD
LL10-1	8/24/2006	LL10-105-20	0.5-2	235 J	9,020	802	0.55	44	2,140 J	2.0 J	2.4	1,380	3.6 UJ	35 J	12,400 JD
LL10-2	8/17/2006	LL10-20-05	0-0.5	315	7,760	244	0.37	33	1,660 J	3.4 J	1.4 J	944 J	6.8 U	31	7,310
LL10-2	8/17/2006	LL10-205-20	0.5-2	268	6,280	142	0.39 U	12 J	319 J	3.6 J	0.65 J	797 J	9.5 U	13 J	4,640
LL10-3	8/17/2006	LL10-30-05	0-0.5	121	3,880	507	0.11 U	9.1	647 J	0.85 J	0.49 J	211 J	2.4 U	15	1,690
LL10-3	8/17/2006	LL10-305-20	0.5-2	28	2,430	300	0.12 U	17	913 J	1.1 J	1.2 U	611 U	3.1 U	19	146
LL10-4	8/17/2006	LL10-40-05	0-0.5	821	5,680	10,100	0.29	22	1,100 J	9.2 U	6.6	1,160 J	6.6 U	28	11,700
LL10-4	8/17/2006	LL10-405-20	0.5-2	787	3,540	1,650	1.1	16	769 J	1.9 J	4.6	788 J	4.3 U	22	7,740
LL10-5	8/17/2006	LL10-50-05	0-0.5	376	4,440	6,160	0.32 U	8.4 J	411 J	7.9 J	3.0 J	816 J	7.9 U	18	4,550
LL10-5	8/17/2006	LL10-505-20	0.5-2	161	3,400	630	0.44 U	15 J	151 J	3.1 J	0.97 J	709 J	11 U	7.8 J	3,510
LL11-1	8/24/2006	LL11-10-05	0-0.5	120 J	8,790	1,000	0.19	48 J	2,310 J	2.2 J	1.3 J	1,550 J	3.8 UJ	35 J	19,400 JD
LL11-1	8/24/2006	LL11-105-20	0.5-2	133 J	9,220	951	0.77	45 J	2,240 J	1.9 J	1.6 J	1,270 J	4.1 UJ	37 J	13,900 J
LL11-2	8/24/2006	LL11-20-05	0-0.5	21 J	21,400	597	0.11 U	13 J	616 J	0.92 J	1.1 U	282 J	2.8 UJ	15 J	612 J
LL11-2	8/24/2006	LL11-205-20	0.5-2	73 J	22,000	658	0.14 U	25 J	1,190 J	1.2 J	0.35 J	1,720 J	3.6 UJ	19 J	23,800 JD
LL11-2	8/24/2006	LLDUP-9	0.5-2	138 J	14,900	867	0.14 U	32 J	1,200 J	1.4 J	0.68 J	3,470 J	3.7 UJ	19 J	53,900 JD
LL11-3	8/17/2006	LL11-30-05	0-0.5	210	12,600	3,120	0.27 J	42	890 J	3.9 J	1.9 J	1,340	6.7 U	18	11,900
LL11-3	8/17/2006	LL11-305-20	0.5-2	200	10,600	3,180	0.29 J	35	711 J	3.1 J	1.6 J	1,210 J	6.9 U	17	10,200
LL11-4	8/24/2006	LL11-40-05	0-0.5	284 J	6,110	1,610	0.34 U	18 J	261 J	3.9 J	1.3 J	1,240 J	8.4 UJ	9.2 J	8,610 J
LL11-5	8/17/2006	LL11-50-05	0-0.5	121	6,760	607	0.077 J	18	1,080 J	1.2 J	0.78 J	585 J	3.2 U	25	2,460
LL11-5	8/17/2006	LL11-505-20	0.5-2	152	4,950	524	0.067 J	13	925 J	0.99 J	0.80 J	512 J	3.4 U	17	3,200

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Table B-10
Lowland Soil TAL Metals and Cyanide Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval	Lead (mg/kg)	Magnesium (mg/kg)	Manganese (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Potassium (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Sodium (mg/kg)	Thallium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
LL12-1	8/17/2006	LL12-10-05	0-0.5	62	8,340	912	0.10 J	40	2,240 J	1.9 J	0.76 J	852	3.6 U	37	6,940
LL12-1	8/17/2006	LL12-105-20	0.5-2	104	8,540	720	0.35	44	2,470 J	2.4 J	1.2 J	945	3.8 U	39	7,000
LL12-2	8/17/2006	LL12-20-05	0-0.5	168 J	10,500	1,010 J	0.22	36 J	2,360 J	1.4 J	0.83 J	2,970 UD	0.67 J	34 J	14,200 JD
LL12-2	8/17/2006	LL12-205-20	0.5-2	290 J	13,200	1,110 J	0.82	33 J	2,040 J	1.3 J	2.1 J	3,090 UD	0.95 J	35 J	15,600 JD
LL12-3	8/17/2006	LL12-30-05	0-0.5	148 J	9,700 J	1,170 J	0.19	49 J	2,240	3.4 J	0.82 J	3,650	3.9 UJ	36 J	65,300 J
LL12-3	8/17/2006	LL12-305-20	0.5-2	320 J	9,940 J	2,520 J	1.1	42 J	2,640	1.2 J	3.1	2,260	3.2 J	37 J	37,400 J
LL12-4	8/17/2006	LL12-40-05	0-0.5	84 J	6,780 J	1,950 J	0.74	28 J	2,650	1.2 J	0.76 J	482 J	3.3 UJ	30 J	5,420 J
LL12-4	8/17/2006	LL12-405-20	0.5-2	146 J	11,500 J	1,090 J	0.64	36 J	3,300	1.6 J	1.3 J	1,110	4.0 UJ	41 J	13,800 J
LL12-5	8/17/2006	LL12-50-05	0-0.5	339 J	9,470	1,490 J	0.30	29 J	3,130 J	1.7 J	2.2 J	3,200 UJ	0.93 J	39	20,600 J
LL12-5	8/17/2006	LL12-505-20	0.5-2	122 J	5,180	7,120 JD	0.43	11 J	540 J	0.93 J	0.69 J	1,030 UJ	1.0 J	9.6 J	2,770 J
LL12-5	8/17/2006	LLDUP-1	0.5-2	203 J	5,250	7,300 JD	0.10 J	12 J	753 J	0.92 J	1.2 J	997 UJ	5.0 U	13	7,190 JD
LL13-1	8/16/2006	LL13-10-05	0-0.5	69 J	10,200	730 J	0.14 J	41 J	2,970 J	1.7 J	0.75 J	851 UJ	1.2 J	39	8,810 JD
LL13-1	8/16/2006	LL13-105-20	0.5-2	67 J	8,230	605 J	0.21	40 J	2,800 J	1.4 J	0.76 J	780 JD	0.96 J	42	10,800 JD
LL13-2	8/16/2006	LL13-20-05	0-0.5	120 J	9,260	1,670 J	0.27	39 J	2,860 J	1.0 J	0.90 J	3,380 UJD	1.2 J	41	16,200 JD
LL13-2	8/16/2006	LL13-205-20	0.5-2	265 J	5,690	6,370 JD	1.2	39 J	2,170 J	4.6 UJ	1.0 J	13,100 UJD	2.1 J	36	30,300 JD
LL13-3	8/16/2006	LL13-30-05	0-0.5	48 J	9,230	3,200 J	0.21	48 J	2,800 J	4.6 UJ	0.50 J	13,100 UJD	1.2 J	37	29,000 JD
LL13-3	8/16/2006	LL13-305-20	0.5-2	1,160 J	4,800	2,060 J	10 D	52 J	2,380 J	3.6 J	5.3 J	17,600 UJD	2.4 J	35	91,700 JD
LL13-4	8/16/2006	LL13-40-05	0-0.5	723 J	7,190	1,120 J	0.30	38 J	2,290 J	3.1 J	4.3 J	14,100 UJD	1.3 J	42	30,100 JD
LL13-4	8/16/2006	LL13-405-20	0.5-2	849 J	4,960	1,900 J	0.89	33 J	1,120 J	3.5 J	3.3 J	21,800 UJD	1.1 J	21	65,900 JD
LL14-1	8/16/2006	LL14-10-05	0-0.5	42 J	8,750 J	1,050 J	0.14 J	38 J	2,930	1.2 J	0.60 J	492 J	2.9 UJ	40 J	2,240 J
LL14-1	8/16/2006	LL14-105-20	0.5-2	127 J	8,140 J	1,710 J	0.47	38 J	2,810	1.1 J	1.5	719	3.3 UJ	39 J	3,120 J
LL14-2	8/16/2006	LL14-20-05	0-0.5	39 J	8,280 J	1,280 J	0.14 J	37 J	3,280	1.5 J	0.56 J	732 J	3.8 UJ	43 J	2,050 J
LL14-2	8/16/2006	LL14-205-20	0.5-2	140 J	7,700 J	903 J	0.67	36 J	3,110	1.6 J	1.3	770	3.2 UJ	42 J	5,030 J
LL14-3	8/16/2006	LL14-30-05	0-0.5	48 J	8,370 J	664 J	0.12 J	35 J	3,140	1.2 J	0.50 J	573 J	3.2 UJ	41 J	1,910 J
LL14-3	8/16/2006	LL14-305-20	0.5-2	221 J	7,530 J	575 J	1.1	31 J	2,720	2.4 J	1.1 J	803	3.9 UJ	42 J	4,790 J
LL14-4	8/16/2006	LL14-40-05	0-0.5	92 J	8,210 J	808 J	0.098 J	31 J	3,050	1.7 J	0.64 J	951	4.0 UJ	41 J	2,490 J
LL14-4	8/16/2006	LL14-405-20	0.5-2	176 J	6,310 J	625 J	0.25 U	6.3 J	781 J	2.8 J	0.96 J	1,090 J	5.9 UJ	15 J	1,680 J
LL15-1	8/16/2006	LL15-10-05	0-0.5	39 J	10,700 J	711 J	0.14	28 J	2,430	1.2 J	0.72 J	534 U	2.7 UJ	34 J	798 J
LL15-1	8/16/2006	LL15-105-20	0.5-2	50 J	7,540 J	992 J	0.23	41 E	2,670	1.1 J	0.81 J	568 J	3.4 UJ	43 J	710 J
LL15-2	8/16/2006	LL15-20-05	0-0.5	40 J	8,750 J	604 J	0.16	36 J	2,760	1.1 J	0.52 J	471 J	2.9 UJ	42 J	449 J
LL15-2	8/16/2006	LL15-205-20	0.5-2	83 J	5,860 J	879 J	0.55	28 J	2,270	1.2 J	0.91 J	612	2.9 UJ	32 J	1,670 J
LL15-3	8/16/2006	LL15-30-05	0-0.5	46 J	8,630 J	684 J	0.12 J	33 J	2,700	1.6 J	0.56 J	638 J	3.3 UJ	38 J	1,200 J
LL15-3	8/16/2006	LL15-305-20	0.5-2	127 J	7,910 J	418 J	0.24	34 J	2,730	1.8 J	1.2 J	799	3.1 UJ	38 J	2,370 J
LL15-4	8/16/2006	LL15-40-05	0-0.5	52 J	6,500 J	1,530 J	0.10 J	23 J	1,810	1.4 J	0.46 J	951	4.2 UJ	33 J	1,530 J
LL15-4	8/16/2006	LL15-405-20	0.5-2	163 J	7,970 J	310 J	0.11 J	29 J	2,440	2.0 J	1.2 J	1,020	4.1 UJ	37 J	2,670 J
LL16-1	8/22/2006	LL16-10-05	0-0.5	45 J	11,600	794	0.20	29 J	2,110	1.5 J	0.92 J	689 U	3.4 UJ	29 J	921 J
LL16-1	8/22/2006	LL16-105-20	0.5-2	57 J	9,360	1,210	0.17	39 J	2,270	1.4 J	1.1 J	395 J	3.4 UJ	35 J	860 J
LL16-2	8/22/2006	LL16-20-05	0-0.5	44 J	11,400	673	0.20	31	2,020 J	1.7 J	0.96 J	300 J	3.6 UJ	30 J	667 J
LL16-2	8/22/2006	LLDUP-5	0-0.5	44 J	11,500	580	0.19	29 J	2,120	1.6 J	0.97 J	729 U	3.6 UJ	31 J	584 J
LL16-2	8/22/2006	LL16-205-20	0.5-2	56 J	9,460	468	0.23	38	2,010 J	2.2 J	0.99 J	370 J	3.7 UJ	34 J	583 J
LL16-2	8/22/2006	LLDUP-6	0.5-2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LL16-3	8/22/2006	LL16-30-05	0-0.5	42 J	11,000	840	0.17	29 J	1,940	1.3 J	0.87 J	704 U	3.5 UJ	28 J	301 J
LL16-3	8/22/2006	LL16-305-20	0.5-2	57 J	9,810	759	0.32	36 J	1,810	1.2 J	1.1 J	679 U	3.4 UJ	31 J	347 J
LL17-1	8/22/2006	LL17-10-05	0-0.5	46 J	11,200	590 J	0.22	30 J	1,840	1.5 J	1.0 J	135 J	3.1 UJ	27 J	197 J
LL17-1	8/22/2006	LL17-105-20	0.5-2	76 J	10,900	634 J	0.39	35 J	1,530	1.2 J	1.6	162 J	3.1 UJ	26 J	384 J

See Notes on Page 10.

Table B-10
Lowland Soil TAL Metals and Cyanide Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval	Lead (mg/kg)	Magnesium (mg/kg)	Manganese (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Potassium (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Sodium (mg/kg)	Thallium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
LL17-2	8/22/2006	LL17-20-05	0-0.5	48 J	10,800	697 J	0.17	31 J	1,940	1.1 J	1.1 J	140 J	3.1 UJ	27 J	208 J
LL17-2	8/22/2006	LL17-205-20	0.5-2	85 J	9,930	667 J	0.34	44 J	1,840	0.99 J	1.8	608 U	3.0 UJ	31 J	484 J
LL17-3	8/22/2006	LL17-30-05	0-0.5	46 J	10,600	617 J	0.21	30 J	2,130	1.3 J	1.0 J	627 U	3.1 UJ	28 J	205 J
LL17-3	8/22/2006	LL17-305-20	0.5-2	60 J	10,600	517 J	0.35	37 J	1,990	1.4 J	1.2 J	637 U	3.2 UJ	31 J	252 J
LL17-4	8/22/2006	LL17-40-05	0-0.5	41 J	10,700	643 J	0.19	28 J	2,250	1.3 J	0.91 J	662 U	3.3 UJ	27 J	203 J
LL17-4	8/22/2006	LL17-405-20	0.5-2	89 J	10,400	664 J	0.35	45 J	1,890	1.3 J	2.1	220 J	3.4 UJ	30 J	377 J
LL17-5	8/22/2006	LL17-50-05	0-0.5	39 J	11,700	588 J	0.18	27 J	2,050	1.3 J	0.80 J	245 J	3.5 UJ	28 J	260 J
LL17-5	8/22/2006	LL17-505-20	0.5-2	51 J	9,540	809 J	0.26	39 J	2,020	1.3 J	0.96 J	283 J	3.5 UJ	32 J	353 J
LL17-6	8/22/2006	LL17-60-05	0-0.5	54 J	10,100	489 J	0.16	39 J	2,370	1.5 J	1.2 J	292 J	3.7 UJ	34 J	669 J
LL17-6	8/22/2006	LL17-605-20	0.5-2	55 J	9,320	503 J	0.62	39 J	2,150	1.7 J	1.2 J	298 J	3.4 UJ	32 J	791 J
LL17-7	8/22/2006	LL17-70-05	0-0.5	45 J	9,060	491 J	0.14	34 J	2,110	1.6 J	0.74 J	445 J	3.4 UJ	32 J	473 J
LL17-7	8/22/2006	LL17-705-20	0.5-2	70 J	7,770	376 J	0.26	34 J	1,980	1.9 J	0.84 J	530 J	3.5 UJ	37 J	794 J
LL18-1	8/21/2006	LL18-10-05	0-0.5	48 J	9,880 J	824 J	0.21	36 J	2,450 J	1.2 J	0.86 J	624 U	3.1 UJ	35 J	514 J
LL18-1	8/21/2006	LL18-105-20	0.5-2	80 J	8,100 J	480 J	0.41	42 J	2,300 J	1.3 J	1.5	624 U	3.1 UJ	36 J	881 J
LL18-1	8/21/2006	LLDUP-4	0.5-2	64 J	8,190 J	492 J	0.20	42 J	2,490 J	1.4 J	1.1 J	622 U	3.1 UJ	37 J	821 J
LL18-2	8/21/2006	LL18-20-05	0-0.5	45 J	9,090 J	323 J	0.20	33 J	2,440 J	1.8 J	0.79 J	674 U	3.4 UJ	35 J	500 J
LL18-2	8/21/2006	LL18-205-20	0.5-2	90 J	7,160 J	519 J	0.13 J	40 J	2,290 J	1.6 J	2.4	616 U	3.1 UJ	37 J	468 J
LL18-3	8/21/2006	LL18-30-05	0-0.5	73 J	8,150 J	387 J	0.25	37 J	2,190 J	1.7 J	1.0 J	672 U	3.4 UJ	36 J	786 J
LL18-3	8/21/2006	LL18-305-20	0.5-2	76 J	8,060 J	943 J	0.26	41 J	2,240 J	1.1 J	1.6	668 U	3.3 UJ	36 J	399 J
LL18-4	8/22/2006	LL18-40-05	0-0.5	61 J	12,000	604	0.25	35 J	1,650	1.1 J	1.2	154 J	2.9 UJ	24 J	242 J
LL18-4	8/22/2006	LL18-405-20	0.5-2	88 J	9,970	692	0.46	45 J	1,730	1.5 J	2.1	240 J	3.1 UJ	29 J	427 J
LL19-1	8/21/2006	LL19-10-05	0-0.5	50 J	9,660 J	732 J	0.23	36 J	2,780 J	1.5 J	0.99 J	674 U	3.4 UJ	36 J	1,210 J
LL19-1	8/21/2006	LL19-105-20	0.5-2	65 J	7,450 J	777 J	0.29	45 J	2,380 J	1.4 J	1.2 J	689 U	3.4 UJ	41 J	514 J
LL19-2	8/21/2006	LL19-20-05	0-0.5	44 J	10,600 J	523 J	0.20	32 J	2,300 J	1.4 J	0.99 J	665 U	3.3 UJ	32 J	374 J
LL19-2	8/21/2006	LL19-205-20	0.5-2	49 J	8,920 J	1,160 J	0.20	39 J	2,450 J	1.1 J	0.94 J	704 U	3.5 UJ	38 J	388 J
LL19-3	8/21/2006	LL19-30-05	0-0.5	48 J	11,700 J	665 J	0.18	30 J	2,430 J	1.5 J	1.1 J	632 U	3.2 UJ	31 J	234 J
LL19-3	8/21/2006	LL19-305-20	0.5-2	86 J	10,100 J	657 J	0.22	46 J	2,340 J	1.5 J	1.8	645 U	3.2 UJ	34 J	323 J
LL19-4	8/21/2006	LL19-40-05	0-0.5	49 J	11,100 J	483 J	0.19	32 J	2,270 J	1.5 J	1.0 J	669 U	3.3 UJ	31 J	233 J
LL19-4	8/21/2006	LL19-405-20	0.5-2	80 J	9,610 J	685 J	0.22	45 J	2,240 J	1.5 J	1.7	663 U	3.3 UJ	35 J	320 J
LL19-5	8/22/2006	LL19-50-05	0-0.5	41 J	11,900	618	0.19	29 J	2,020	1.6 J	0.94 J	697 U	3.5 UJ	29 J	204 J
LL19-5	8/22/2006	LL19-505-20	0.5-2	72 J	9,110	789	0.20	43 J	2,230	1.4 J	1.6	670 U	3.4 UJ	36 J	284 J
LL19-6	8/22/2006	LL19-60-05	0-0.5	43 J	12,500	675	0.17	29 J	1,990	1.2 J	0.92 J	572 U	2.9 UJ	26 J	195 J
LL19-6	8/22/2006	LL19-605-20	0.5-2	76 J	10,500	678	0.34	41 J	1,830	1.4 J	1.7	616 U	3.1 UJ	31 J	326 J
LL20-1	8/21/2006	LL20-10-05	0-0.5	46 J	10,600 J	710 J	0.18	31 J	2,310 J	1.2 J	1.1 J	637 U	3.2 UJ	32 J	363 J
LL20-1	8/21/2006	LL20-105-20	0.5-2	59 J	8,480	651	0.22	42 J	2,430	1.5 J	1.1 J	710 U	3.6 UJ	38 J	376 J
LL20-2	8/21/2006	LL20-20-05	0-0.5	42 J	11,100	730	0.16	31 J	2,470	1.6 J	0.99 J	640 U	3.2 UJ	32 J	242 J
LL20-2	8/21/2006	LL20-205-20	0.5-2	71 J	7,860	595	0.41	42 J	2,150	1.3 J	1.5	622 U	3.1 UJ	33 J	477 J
LL20-3	8/21/2006	LL20-30-05	0-0.5	41 J	10,400	672	0.14	32 J	2,740	1.7 JN	0.91 J	703 J	3.5 UJ	34 J	245 J
LL20-3	8/21/2006	LL20-305-20	0.5-2	60 J	11,000	937	0.18	39 J	2,520	1.4 J	1.3 J	690 U	3.5 UJ	34 J	266 J
LL20-4	8/21/2006	LL20-40-05	0-0.5	45 J	11,800	622	0.23	29 J	2,440	1.5 J	1.1 J	671 U	3.4 UJ	30 J	223 J
LL20-4	8/21/2006	LL20-405-20	0.5-2	56 J	9,060	479	0.28	37 J	2,210	1.7 J	1.1 J	626 U	3.1 UJ	35 J	266 J
LL20-5	8/22/2006	LL20-50-05	0-0.5	42 J	13,300	691	0.23	27 J	2,040	1.2 J	0.97 J	576 U	2.9 UJ	25 J	187 J
LL20-5	8/22/2006	LL20-505-20	0.5-2	76 J	11,200	666	0.38	40 J	1,870	1.4 J	1.7	601 U	3.0 UJ	29 J	339 J
LL21-1	8/22/2006	LL21-10-05	0-0.5	44 J	10,500	724 J	0.19	32 J	2,420	1.4 J	0.87 J	645 U	3.2 UJ	31 J	382 J
LL21-1	8/22/2006	LL21-105-20	0.5-2	44 J	7,780	715 J	0.35	35 J	1,770	1.5 J	0.64 J	245 J	3.5 UJ	33 J	316 J

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Table B-10
Lowland Soil TAL Metals and Cyanide Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval	Lead (mg/kg)	Magnesium (mg/kg)	Manganese (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Potassium (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Sodium (mg/kg)	Thallium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
LL21-2	8/22/2006	LL21-20-05	0-0.5	37 J	10,200	491 J	0.14	28 J	2,270	1.8 J	0.82 J	688 U	3.4 UJ	28 J	199 J
LL21-2	8/22/2006	LL21-205-20	0.5-2	77 J	8,040	326 J	0.31	43 J	2,090	2.1 J	1.5	251 J	3.5 UJ	34 J	469 J
LL21-3	8/22/2006	LL21-30-05	0-0.5	42 J	12,000	690 J	0.20	28 J	2,090	1.5 J	0.94 J	670 U	3.3 UJ	28 J	191 J
LL21-3	8/22/2006	LL21-305-20	0.5-2	53 J	10,600	511 J	0.29	36 J	2,130	1.5 J	1.1 J	668 U	3.3 UJ	33 J	226 J
Goose Lake															
GLBF-01	9/27/2006	GLBF-01-0-0.5	0-0.5	24 J	7,860 J	777	0.15 U	26 J	1,370	5.4 UJ	0.16 J	215 J	0.72 J	26	109
GLBF-01	9/27/2006	GLBF-01-0.5-2.0	0.5-2	26 J	5,060 J	487	0.076 J	29 J	1,320	5.1 UJ	0.12 J	728 U	3.6 U	28	113
GLBF-02	9/27/2006	GLBF-02-0-0.5	0-0.5	25 J	5,410 J	365	0.089 J	26 J	1,600	4.2 UJ	0.15 J	209 J	1.1 J	26	109
GLBF-02	9/27/2006	GLBF-02-0.5-2.0	0.5-2	17 J	8,230 J	639	0.15 U	26 J	1,500	5.1 UJ	1.5 U	243 J	1.2 J	26	73
GLBF-03	9/26/2006	GLBF-03-0-0.5	0-0.5	15 J	3,870 J	590	0.11 U	26 J	1,340	4.0 UJ	1.1 U	572 U	0.81 J	23	75
GLBF-03	9/26/2006	GLBF-03-0.5-2.0	0.5-2	16 J	4,230 J	813	0.12 U	30 J	1,270	4.3 UJ	1.2 U	611 U	3.1 U	23	80
GLBF-04	9/26/2006	GLBF-04-0-0.5	0-0.5	11 J	1,860 J	487	0.11 U	14 J	942	3.8 UJ	1.1 U	539 U	2.7 U	21	42
GLBF-04	9/26/2006	GLBF-04-0.5-2.0	0.5-2	10 J	2,290 J	728	0.11 U	16 J	1,140	4.0 UJ	1.1 U	572 U	2.9 U	22	46
GLBF-04	9/27/2006	GLBF-DUP-1	0.5-2	10 J	2,430 J	720	0.12 U	17 J	1,100	4.0 UJ	1.1 U	573 U	2.9 U	23	49
GLBF-05	9/26/2006	GLBF-05-0-0.5	0-0.5	29 J	8,290 J	846	0.069 J	33 J	2,260	5.9 UJ	0.13 J	214 J	0.61 J	42	131
GLBF-05	9/27/2006	GLBF-05-0.5-2.0	0.5-2	19 J	7,770 J	912	0.15 U	26 J	1,850	5.4 UJ	1.5 U	767 U	3.8 U	39 J	95 J
GLBF-06	9/26/2006	GLBF-06-0-0.5	0-0.5	19 J	9,940 J	507	0.18 U	25 J	2,120	5.9 UJ	1.7 U	229 J	0.88 J	34	89
GLBF-06	9/26/2006	GLBF-06-0.5-2.0	0.5-2	24 J	8,120 J	416	0.13 J	27 J	2,100	5.2 UJ	0.16 J	205 J	1.0 J	33	110
GLBF-06	9/27/2006	GLBF-DUP-2	0.5-2	24 J	8,030 J	444	0.16 U	28 J	2,090	5.6 UJ	0.14 J	794 U	0.62 J	35 J	111 J
GLBF-07	9/26/2006	GLBF-07-0-0.5	0-0.5	20 J	7,160 J	762	0.16 U	25 J	2,210	4.9 UJ	1.4 U	706 U	0.97 J	34	101
GLBF-07	9/26/2006	GLBF-07-0.5-2.0	0.5-2	19 J	7,870 J	583	0.15 U	23 J	1,930	5.0 UJ	1.4 U	204 J	0.76 J	33	82
GLBF-08	9/27/2006	GLBF-08-0-0.5	0-0.5	36 J	12,700 J	592	0.19	24 J	1,980	4.8 UJ	0.72 J	679 U	1.0 J	21	174
GLBF-08	9/27/2006	GLBF-08-0.5-2.0	0.5-2	52 J	11,400 J	616	0.38	35 J	1,940	5.1 UJ	1.0 J	230 J	1.2 J	26	236
GLBF-09	9/27/2006	GLBF-09-0-0.5	0-0.5	38 J	12,700 J	703	0.21	27 J	2,360	5.4 UJ	0.81 J	215 J	0.99 J	25	195
GLBF-09	9/27/2006	GLBF-09-0.5-2.0	0.5-2	70 J	10,400 J	1,000	0.37	43 J	1,940	4.9 UJ	1.6	231 J	3.5 U	26	317
GLBF-10	9/27/2006	GLBF-10-0-0.5	0-0.5	38 J	12,300 J	727	0.22	28 J	2,340	5.2 UJ	0.77 J	197 J	1.0 J	25	189
GLBF-10	9/27/2006	GLBF-10-0.5-2.0	0.5-2	46 J	12,200 J	739	0.19	30 J	2,440	5.0 UJ	0.94 J	196 J	0.49 J	24	215

Notes:
Concentrations are reported on a dry-weight basis.
Non-detect values reported at the reporting limit.
NA - not applicable
D - Sample re-analyzed at higher dilution factor.
J - estimated value
JD - Estimated value. Sample re-analyzed at higher dilution factor.
R - rejected
U - The analyte was analyzed for, but not detected.
UD - The analyte was re-analyzed at higher dilution factor, but not detected.
UJ - The analyte was analyzed for, but not detected. Detection limit is estimated.
UJD - The analyte was re-analyzed at higher dilution factor, but not detected. Detection limit is estimated.
mg/kg - milligrams per kilogram

Table B-11
Lowland Soil PAH Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval (ft)	Acenaphthene (mg/kg)	Acenaphthylene (mg/kg)	Anthracene (mg/kg)	Benzo(a)anthracene (mg/kg)	Benzo(a)pyrene (mg/kg)	Benzo(b)fluoranthene (mg/kg)	Benzo(g,h,i)perylene (mg/kg)
DePue Lake										
LL1-1	8/23/2006	LL1-10-05	0-0.5	0.53 U	0.53 U	0.53 U	0.12 J	0.17 J	0.17 J	0.12 J
LL1-1	8/23/2006	LL1-105-20	0.5-2	0.49 U	0.49 U	0.49 U	0.14 J	0.17 J	0.17 J	0.13 J
LL4-3	8/24/2006	LL4-30-05	0-0.5	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U
LL4-3	8/24/2006	LL4-305-20	0.5-2	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
LL5-1	8/24/2006	LL5-10-05	0-0.5	0.55 U	0.55 U	0.55 U	0.55 U	0.55 U	0.55 U	0.55 U
LL5-1	8/24/2006	LL5-105-20	0.5-2	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U
LL7-2	8/17/2006	LL7-20-05	0-0.5	1.1 U	1.1 U	1.1 U	0.76 J	0.95 J	1.2	0.37 J
LL7-2	8/17/2006	LL7-205-20	0.5-2	0.66 U	0.66 U	0.17 J	0.39 J	0.22 J	0.34 J	0.66 U
LL7-4	8/17/2006	LL7-40-05	0-0.5	0.65 U	0.65 U	0.65 U	0.22 J	0.26 J	0.34 J	0.17 J
LL7-4	8/17/2006	LL7-405-20	0.5-2	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
LL10-1	8/24/2006	LL10-10-05	0-0.5	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U
LL10-1	8/24/2006	LL10-105-20	0.5-2	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U
LL12-2	8/17/2006	LL12-20-05	0-0.5	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U
LL12-2	8/17/2006	LL12-205-20	0.5-2	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U
LL14-1	8/16/2006	LL14-10-05	0-0.5	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U
LL14-1	8/16/2006	LL14-105-20	0.5-2	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U
LL16-2	8/22/2006	LL16-20-05	0-0.5	0.96 U	0.40 J	1.3	7.7	5.6 JD	10 D	0.98
LL16-2	8/22/2006	LL16-205-20	0.5-2	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 UJ	0.49 U
LL16-2	8/22/2006	LLDUP-6	0.5-2	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.11 J	0.49 U

See Notes on Page 4.

Table B-11
Lowland Soil PAH Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval (ft)	Acenaphthene (mg/kg)	Acenaphthylene (mg/kg)	Anthracene (mg/kg)	Benzo(a)anthracene (mg/kg)	Benzo(a)pyrene (mg/kg)	Benzo(b)fluoranthene (mg/kg)	Benzo(g,h,i)perylene (mg/kg)
Goose Lake										
GLBF-01	9/27/2006	GLBF-01-0-0.5	0-0.5	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U
GLBF-01	9/27/2006	GLBF-01-0.5-2.0	0.5-2	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U
GLBF-02	9/27/2006	GLBF-02-0-0.5	0-0.5	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U
GLBF-02	9/27/2006	GLBF-02-0.5-2.0	0.5-2	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
GLBF-03	9/26/2006	GLBF-03-0-0.5	0-0.5	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U
GLBF-03	9/26/2006	GLBF-03-0.5-2.0	0.5-2	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
GLBF-04	9/26/2006	GLBF-04-0-0.5	0-0.5	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U
GLBF-04	9/26/2006	GLBF-04-0.5-2.0	0.5-2	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U
GLBF-04	9/27/2006	GLBF-DUP-1	0.5-2	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U
GLBF-05	9/26/2006	GLBF-05-0-0.5	0-0.5	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U
GLBF-05	9/27/2006	GLBF-05-0.5-2.0	0.5-2	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U
GLBF-06	9/26/2006	GLBF-06-0-0.5	0-0.5	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U
GLBF-06	9/26/2006	GLBF-06-0.5-2.0	0.5-2	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U
GLBF-06	9/27/2006	GLBF-DUP-2	0.5-2	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U
GLBF-07	9/26/2006	GLBF-07-0-0.5	0-0.5	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U
GLBF-07	9/26/2006	GLBF-07-0.5-2.0	0.5-2	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U
GLBF-08	9/27/2006	GLBF-08-0-0.5	0-0.5	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U
GLBF-08	9/27/2006	GLBF-08-0.5-2.0	0.5-2	0.52 U	0.52 U	0.52 U	0.14 J	0.17 J	0.17 J	0.14 J
GLBF-09	9/27/2006	GLBF-09-0-0.5	0-0.5	0.53 U	0.53 U	0.53 U	0.17 J	0.17 J	0.25 J	0.53 U
GLBF-09	9/27/2006	GLBF-09-0.5-2.0	0.5-2	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.12 J	0.49 U
GLBF-10	9/27/2006	GLBF-10-0-0.5	0-0.5	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U
GLBF-10	9/27/2006	GLBF-10-0.5-2.0	0.5-2	0.50 U	0.50 U	0.50 U	0.11 J	0.10 J	0.16 J	0.50 U

See Notes on Page 4.

Table B-11
Lowland Soil PAH Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval	Benzo(k)fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenz(a,h)anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(1,2,3-cd)pyrene (mg/kg)	Naphthalene (mg/kg)	Phenanthrene (mg/kg)	Pyrene (mg/kg)	Total PAHs (mg/kg)
DePue Lake													
LL1-1	8/23/2006	LL1-10-05	0-0.5	0.16 J	0.17 J	0.53 U	0.23 J	0.53 U	0.15 J	0.53 U	0.53 U	0.20 J	1.5
LL1-1	8/23/2006	LL1-105-20	0.5-2	0.16 J	0.18 J	0.49 U	0.21 J	0.49 U	0.15 J	0.49 U	0.49 U	0.20 J	1.5
LL4-3	8/24/2006	LL4-30-05	0-0.5	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U
LL4-3	8/24/2006	LL4-305-20	0.5-2	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
LL5-1	8/24/2006	LL5-10-05	0-0.5	0.55 U	0.11 J	0.55 U	0.12 J	0.55 U	0.55 U	0.55 U	0.55 U	0.13 J	0.36
LL5-1	8/24/2006	LL5-105-20	0.5-2	0.51 U	0.51 U	0.51 U	0.10 J	0.51 U	0.51 U	0.51 U	0.51 U	0.12 J	0.22
LL7-2	8/17/2006	LL7-20-05	0-0.5	0.90 J	1.3	0.35 J	1.8	1.1 U	0.65 J	1.1 U	1.6	1.5	11
LL7-2	8/17/2006	LL7-205-20	0.5-2	0.23 J	0.48 J	0.66 U	0.88	0.15 J	0.66 U	0.34 J	1.1	0.66	5.0
LL7-4	8/17/2006	LL7-40-05	0-0.5	0.25 J	0.33 J	0.65 U	0.56 J	0.65 U	0.22 J	0.65 U	0.24 J	0.44 J	3.0
LL7-4	8/17/2006	LL7-405-20	0.5-2	1.2 U	1.2 U	1.2 U	0.25 J	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	0.25
LL10-1	8/24/2006	LL10-10-05	0-0.5	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U
LL10-1	8/24/2006	LL10-105-20	0.5-2	0.49 U	0.49 U	0.49 U	0.11 J	0.49 U	0.49 U	0.49 U	0.49 U	0.12 J	0.23
LL12-2	8/17/2006	LL12-20-05	0-0.5	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U
LL12-2	8/17/2006	LL12-205-20	0.5-2	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U
LL14-1	8/16/2006	LL14-10-05	0-0.5	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U
LL14-1	8/16/2006	LL14-105-20	0.5-2	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U
LL16-2	8/22/2006	LL16-20-05	0-0.5	7.1	9.7 D	1.1	5.3 JD	0.96 U	3.2	0.96 U	0.96 U	13 D	65
LL16-2	8/22/2006	LL16-205-20	0.5-2	0.49 U	0.49 U	0.49 U	0.13 J	0.49 U	0.49 U	0.49 U	0.49 U	0.13 J	0.26
LL16-2	8/22/2006	LLDUP-6	0.5-2	0.49 U	0.49 U	0.49 U	0.10 J	0.49 U	0.49 U	0.49 U	0.49 U	0.10 J	0.31

See Notes on Page 4.

Table B-11
Lowland Soil PAH Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval	Benzo(k)fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenz(a,h)anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(1,2,3-cd)pyrene (mg/kg)	Naphthalene (mg/kg)	Phenanthrene (mg/kg)	Pyrene (mg/kg)	Total PAHs (mg/kg)
Goose Lake													
GLBF-01	9/27/2006	GLBF-01-0-0.5	0-0.5	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U
GLBF-01	9/27/2006	GLBF-01-0.5-2.0	0.5-2	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U
GLBF-02	9/27/2006	GLBF-02-0-0.5	0-0.5	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U
GLBF-02	9/27/2006	GLBF-02-0.5-2.0	0.5-2	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
GLBF-03	9/26/2006	GLBF-03-0-0.5	0-0.5	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U
GLBF-03	9/26/2006	GLBF-03-0.5-2.0	0.5-2	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
GLBF-04	9/26/2006	GLBF-04-0-0.5	0-0.5	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U
GLBF-04	9/26/2006	GLBF-04-0.5-2.0	0.5-2	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U
GLBF-04	9/27/2006	GLBF-DUP-1	0.5-2	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U
GLBF-05	9/26/2006	GLBF-05-0-0.5	0-0.5	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U
GLBF-05	9/27/2006	GLBF-05-0.5-2.0	0.5-2	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U
GLBF-06	9/26/2006	GLBF-06-0-0.5	0-0.5	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U
GLBF-06	9/26/2006	GLBF-06-0.5-2.0	0.5-2	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U
GLBF-06	9/27/2006	GLBF-DUP-2	0.5-2	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U
GLBF-07	9/26/2006	GLBF-07-0-0.5	0-0.5	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U
GLBF-07	9/26/2006	GLBF-07-0.5-2.0	0.5-2	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U
GLBF-08	9/27/2006	GLBF-08-0-0.5	0-0.5	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U
GLBF-08	9/27/2006	GLBF-08-0.5-2.0	0.5-2	0.14 J	0.18 J	0.52 U	0.14 J	0.52 U	0.13 J	0.52 U	0.52 U	0.20 J	1.4
GLBF-09	9/27/2006	GLBF-09-0-0.5	0-0.5	0.20 J	0.25 J	0.53 U	0.20 J	0.53 U	0.15 J	0.53 U	0.53 U	0.25 J	1.6
GLBF-09	9/27/2006	GLBF-09-0.5-2.0	0.5-2	0.11 J	0.13 J	0.49 U	0.11 J	0.49 U	0.49 U	0.49 U	0.49 U	0.14 J	0.61
GLBF-10	9/27/2006	GLBF-10-0-0.5	0-0.5	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U
GLBF-10	9/27/2006	GLBF-10-0.5-2.0	0.5-2	0.12 J	0.15 J	0.50 U	0.13 J	0.50 U	0.10 J	0.50 U	0.50 U	0.17 J	1.0

Notes:
Concentrations are reported on a dry-weight basis.
Non-detect values reported at the reporting limit.
D - Sample re-analyzed at higher dilution factor.
J - estimated value
JD - Estimated value. Sample re-analyzed at higher dilution factor.
U - The analyte was analyzed for, but not detected.
UJ - The analyte was analyzed for, but not detected. Detection limit is estimated.
mg/kg - milligrams per kilogram

Table B-12
Lowland Soil Pesticide/Herbicide Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval (ft)	4,4'-DDD (µg/kg)	4,4'-DDE (µg/kg)	4,4'-DDT (µg/kg)	Aldrin (µg/kg)	Alpha-BHC (µg/kg)	Alpha-Chlordane (µg/kg)	Beta-BHC (µg/kg)	Delta-BHC (µg/kg)	Dieldrin (µg/kg)	Endosulfan I (µg/kg)
DePue Lake													
LL1-1	8/23/2006	LL1-10-05	0-0.5	5.3 U	1.3 J	5.3 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	1.3 J	2.7 U
LL1-1	8/23/2006	LL1-105-20	0.5-2	1.5 J	4.9 U	2.7 J	2.5 U	2.5 U	0.98 J	2.5 U	2.5 U	2.5 J	2.5 U
LL4-3	8/24/2006	LL4-30-05	0-0.5	3.9 U	1.1 J	3.9 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	0.84 J	2.0 U
LL4-3	8/24/2006	LL4-305-20	0.5-2	4.0 U	2.2 J	1.4 J	2.1 U	2.1 U	0.69 J	2.1 U	2.1 U	2.2 J	2.1 U
LL5-1	8/24/2006	LL5-10-05	0-0.5	1.3 J	2.1 J	2.5 J	2.8 U	2.8 U	1.1 J	2.8 U	2.8 U	5.5 U	2.8 U
LL5-1	8/24/2006	LL5-105-20	0.5-2	5.1 U	5.1 U	5.1 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	5.1 U	2.6 U
LL7-2	8/17/2006	LL7-20-05	0-0.5	5.5 U	5.5 U	10	2.8 U	2.8 U	2.8 U	2.8 U	2.8 U	5.5 U	2.8 U
LL7-2	8/17/2006	LL7-205-20	0.5-2	5.8 JN	3.3 U	9.2 JN	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	4.4 JN	1.7 U
LL7-4	8/17/2006	LL7-40-05	0-0.5	6.5 U	6.5 U	6.5 U	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U	8.8 JN	3.3 U
LL7-4	8/17/2006	LL7-405-20	0.5-2	12 U	12 U	5.7 J	6.3 U	6.3 U	6.3 U	6.3 U	6.3 U	3.2 J	6.3 U
LL10-1	8/24/2006	LL10-10-05	0-0.5	1.1 J	2.3 J	1.9 J	2.4 U	2.4 U	0.85 J	2.4 U	2.4 U	4.1 J	2.4 U
LL10-1	8/24/2006	LL10-105-20	0.5-2	4.3 J	4.8 J	5.4	2.5 U	2.5 U	2.8	2.5 U	2.5 U	11	2.5 U
LL12-2	8/17/2006	LL12-20-05	0-0.5	3.3 U	R	17 JN	1.7 U	1.7 U	2.0	1.7 U	1.7 U	13	1.7 U
LL12-2	8/17/2006	LL12-205-20	0.5-2	3.3 U	3.3 U	3.3 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	3.6	1.7 U
LL14-1	8/16/2006	LL14-10-05	0-0.5	4.7 U	1.7 J	4.7 UJ	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	4.4 J	2.4 U
LL14-1	8/16/2006	LL14-105-20	0.5-2	5.2 U	1.5 J	5.2 UJ	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	3.1 J	2.7 U
LL16-2	8/22/2006	LL16-20-05	0-0.5	4.8 U	4.8 U	6.1 JN	2.5 U	2.5 U	2.5 U	28 JN	2.5 U	4.8 U	2.5 U
LL16-2	8/22/2006	LL16-205-20	0.5-2	1.6 J	1.8 J	3.7 J	2.5 U	2.5 U	2.4 J	2.5 U	2.5 U	7.6	2.5 U
LL16-2	8/22/2006	LLDUP-6	0.5-2	1.3 J	4.9 UJ	3.2 J	2.5 U	2.5 U	2.1 J	2.5 U	2.5 U	7.1	2.5 U

See Notes on Page 6.

Table B-12
Lowland Soil Pesticide/Herbicide Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval (ft)	4,4'-DDD (µg/kg)	4,4'-DDE (µg/kg)	4,4'-DDT (µg/kg)	Aldrin (µg/kg)	Alpha-BHC (µg/kg)	Alpha-Chlordane (µg/kg)	Beta-BHC (µg/kg)	Delta-BHC (µg/kg)	Dieldrin (µg/kg)	Endosulfan I (µg/kg)
Goose Lake													
GLBF-01	9/27/2006	GLBF-01-0-0.5	0-0.5	5.2 U	5.2 U	5.2 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	1.3 J	2.7 U
GLBF-01	9/27/2006	GLBF-01-0.5-2.0	0.5-2	5.2 U	5.2 U	5.2 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	5.2 U	2.7 U
GLBF-02	9/27/2006	GLBF-02-0-0.5	0-0.5	4.1 U	4.1 U	4.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	1.4 J	2.1 U
GLBF-02	9/27/2006	GLBF-02-0.5-2.0	0.5-2	5.0 U	5.0 U	5.0 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	5.0 U	2.6 U
GLBF-03	9/26/2006	GLBF-03-0-0.5	0-0.5	3.9 U	3.9 U	3.9 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	3.9 U	2.0 U
GLBF-03	9/26/2006	GLBF-03-0.5-2.0	0.5-2	4.0 U	4.0 U	4.0 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	4.0 U	2.1 U
GLBF-04	9/26/2006	GLBF-04-0-0.5	0-0.5	3.8 U	3.8 U	3.8 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	3.8 U	2.0 U
GLBF-04	9/26/2006	GLBF-04-0.5-2.0	0.5-2	3.9 U	3.9 U	3.9 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	3.9 U	2.0 U
GLBF-04	9/27/2006	GLBF-DUP-1	0.5-2	3.8 U	3.8 U	3.8 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	3.8 U	2.0 U
GLBF-05	9/26/2006	GLBF-05-0-0.5	0-0.5	5.7 U	1.7 J	5.7 U	2.9 U	2.9 U	2.9 U	2.9 U	2.9 U	1.7 J	2.9 U
GLBF-05	9/27/2006	GLBF-05-0.5-2.0	0.5-2	5.1 U	5.1 U	5.1 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	5.1 U	2.6 U
GLBF-06	9/26/2006	GLBF-06-0-0.5	0-0.5	5.8 U	5.8 U	5.8 U	3.0 U	3.0 U	3.9	3.0 U	3.0 U	5.8 U	3.0 U
GLBF-06	9/26/2006	GLBF-06-0.5-2.0	0.5-2	5.2 U	1.1 J	5.2 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	5.2 U	2.7 U
GLBF-06	9/27/2006	GLBF-DUP-2	0.5-2	5.4 U	5.4 U	5.4 U	2.8 U	2.8 U	2.8 U	2.8 U	2.8 U	5.4 U	2.8 U
GLBF-07	9/26/2006	GLBF-07-0-0.5	0-0.5	4.9 U	1.1 J	4.9 U	2.5 U	2.5 U	0.68 J	2.5 U	2.5 U	2.8 J	2.5 U
GLBF-07	9/26/2006	GLBF-07-0.5-2.0	0.5-2	5.1 U	1.1 J	5.1 U	2.6 U	2.6 U	0.75 J	2.6 U	2.6 U	2.6 J	2.6 U
GLBF-08	9/27/2006	GLBF-08-0-0.5	0-0.5	4.9 U	1.6 J	4.9 U	2.5 U	2.5 U	0.73 J	2.5 U	2.5 U	2.2 J	2.5 U
GLBF-08	9/27/2006	GLBF-08-0.5-2.0	0.5-2	2.4 J	2.5 J	5.2 U	2.7 U	2.7 U	0.80 JN	2.7 U	2.7 U	5.1 J	2.7 U
GLBF-09	9/27/2006	GLBF-09-0-0.5	0-0.5	1.5 J	2.3 J	5.3 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	4.6 J	2.7 U
GLBF-09	9/27/2006	GLBF-09-0.5-2.0	0.5-2	4.9 U	1.6 J	4.9 U	2.5 U	2.5 U	1.4 J	2.5 U	2.5 U	5.2	2.5 U
GLBF-10	9/27/2006	GLBF-10-0-0.5	0-0.5	4.9 U	4.9 U	4.9 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.9 J	2.5 U
GLBF-10	9/27/2006	GLBF-10-0.5-2.0	0.5-2	1.2 J	5.0 U	5.0 U	2.6 U	2.6 U	1.1 J	2.6 U	2.6 U	3.9 J	2.6 U

See Notes on Page 6.

Table B-12
Lowland Soil Pesticide/Herbicide Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval (ft)	Endosulfan II (µg/kg)	Endosulfan sulfate (µg/kg)	Endrin (µg/kg)	Endrin aldehyde (µg/kg)	Endrin ketone (µg/kg)	gamma-BHC (Lindane) (µg/kg)
DePue Lake									
LL1-1	8/23/2006	LL1-10-05	0-0.5	5.3 U	5.3 U	5.3 U	1.4 J	5.3 U	2.7 U
LL1-1	8/23/2006	LL1-105-20	0.5-2	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	2.5 U
LL4-3	8/24/2006	LL4-30-05	0-0.5	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	2.0 U
LL4-3	8/24/2006	LL4-305-20	0.5-2	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	2.1 U
LL5-1	8/24/2006	LL5-10-05	0-0.5	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	2.8 U
LL5-1	8/24/2006	LL5-105-20	0.5-2	5.1 U	5.1 U	5.1 U	5.1 U	5.1 U	2.6 U
LL7-2	8/17/2006	LL7-20-05	0-0.5	5.5 U	5.5 U	5.5 U	5.5 U	6.4 J	2.8 U
LL7-2	8/17/2006	LL7-205-20	0.5-2	3.3 U	3.3 U	4.5 JN	3.3 U	5.7 JN	1.7 U
LL7-4	8/17/2006	LL7-40-05	0-0.5	6.5 U	6.5 U	6.5 U	6.5 U	6.5 U	3.3 U
LL7-4	8/17/2006	LL7-405-20	0.5-2	12 U	12 U	12 U	12 U	12 U	6.3 U
LL10-1	8/24/2006	LL10-10-05	0-0.5	4.6 U	4.6 U	4.6 U	1.2 J	4.6 U	2.4 U
LL10-1	8/24/2006	LL10-105-20	0.5-2	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	2.5 U
LL12-2	8/17/2006	LL12-20-05	0-0.5	3.3 U	3.3 U	3.2 J	3.3 U	3.3 U	1.7 U
LL12-2	8/17/2006	LL12-205-20	0.5-2	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U	1.7 U
LL14-1	8/16/2006	LL14-10-05	0-0.5	4.7 U	4.7 U	4.7 U	4.7 U	4.7 U	2.4 U
LL14-1	8/16/2006	LL14-105-20	0.5-2	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	2.7 U
LL16-2	8/22/2006	LL16-20-05	0-0.5	4.8 U	14 JN	6.1 JN	13	24 J	2.5 U
LL16-2	8/22/2006	LL16-205-20	0.5-2	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	2.5 U
LL16-2	8/22/2006	LLDUP-6	0.5-2	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	2.5 U

See Notes on Page 6.

Table B-12
Lowland Soil Pesticide/Herbicide Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval (ft)	Endosulfan II (µg/kg)	Endosulfan sulfate (µg/kg)	Endrin (µg/kg)	Endrin aldehyde (µg/kg)	Endrin ketone (µg/kg)	gamma-BHC (Lindane) (µg/kg)
Goose Lake									
GLBF-01	9/27/2006	GLBF-01-0-0.5	0-0.5	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	2.7 U
GLBF-01	9/27/2006	GLBF-01-0.5-2.0	0.5-2	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	2.7 U
GLBF-02	9/27/2006	GLBF-02-0-0.5	0-0.5	4.1 U	4.1 U	4.1 U	4.1 U	4.1 U	2.1 U
GLBF-02	9/27/2006	GLBF-02-0.5-2.0	0.5-2	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	2.6 U
GLBF-03	9/26/2006	GLBF-03-0-0.5	0-0.5	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	2.0 U
GLBF-03	9/26/2006	GLBF-03-0.5-2.0	0.5-2	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	2.1 U
GLBF-04	9/26/2006	GLBF-04-0-0.5	0-0.5	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	2.0 U
GLBF-04	9/26/2006	GLBF-04-0.5-2.0	0.5-2	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	2.0 U
GLBF-04	9/27/2006	GLBF-DUP-1	0.5-2	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	2.0 U
GLBF-05	9/26/2006	GLBF-05-0-0.5	0-0.5	5.7 U	5.7 U	5.7 U	5.7 U	5.7 U	2.9 U
GLBF-05	9/27/2006	GLBF-05-0.5-2.0	0.5-2	5.1 U	5.1 U	5.1 U	5.1 U	5.1 U	2.6 U
GLBF-06	9/26/2006	GLBF-06-0-0.5	0-0.5	5.8 U	5.8 U	5.8 U	5.8 U	5.8 U	3.0 U
GLBF-06	9/26/2006	GLBF-06-0.5-2.0	0.5-2	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	2.7 U
GLBF-06	9/27/2006	GLBF-DUP-2	0.5-2	5.4 U	5.4 U	5.4 U	5.4 U	5.4 U	2.8 U
GLBF-07	9/26/2006	GLBF-07-0-0.5	0-0.5	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	2.5 U
GLBF-07	9/26/2006	GLBF-07-0.5-2.0	0.5-2	5.1 U	5.1 U	5.1 U	5.1 U	5.1 U	2.6 U
GLBF-08	9/27/2006	GLBF-08-0-0.5	0-0.5	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	2.5 U
GLBF-08	9/27/2006	GLBF-08-0.5-2.0	0.5-2	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	2.7 U
GLBF-09	9/27/2006	GLBF-09-0-0.5	0-0.5	5.3 U	5.3 U	5.3 U	5.3 U	5.3 U	2.7 U
GLBF-09	9/27/2006	GLBF-09-0.5-2.0	0.5-2	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	2.5 U
GLBF-10	9/27/2006	GLBF-10-0-0.5	0-0.5	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	2.5 U
GLBF-10	9/27/2006	GLBF-10-0.5-2.0	0.5-2	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	2.6 U

See Notes on Page 6.

Table B-12
Lowland Soil Pesticide/Herbicide Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval (ft)	gamma-Chlordane (µg/kg)	Heptachlor (µg/kg)	Heptachlor epoxide (µg/kg)	Methoxychlor (µg/kg)	Toxaphene (µg/kg)
DePue Lake								
LL1-1	8/23/2006	LL1-10-05	0-0.5	2.7 U	2.7 U	2.7 U	27 U	270 U
LL1-1	8/23/2006	LL1-105-20	0.5-2	2.5 U	2.5 U	0.80 J	25 U	250 U
LL4-3	8/24/2006	LL4-30-05	0-0.5	2.0 U	2.0 U	2.0 U	20 U	200 U
LL4-3	8/24/2006	LL4-305-20	0.5-2	0.90 J	2.1 U	2.1 U	21 U	210 U
LL5-1	8/24/2006	LL5-10-05	0-0.5	2.8 U	2.8 U	2.8 U	28 U	280 U
LL5-1	8/24/2006	LL5-105-20	0.5-2	2.6 U	2.6 U	2.6 U	26 U	260 U
LL7-2	8/17/2006	LL7-20-05	0-0.5	2.8 U	2.8 U	2.8 U	28 U	280 U
LL7-2	8/17/2006	LL7-205-20	0.5-2	1.7 U	1.7 U	1.7 U	20 JN	170 U
LL7-4	8/17/2006	LL7-40-05	0-0.5	3.3 U	3.3 U	3.3 U	33 U	330 U
LL7-4	8/17/2006	LL7-405-20	0.5-2	6.3 U	6.3 UJ	6.3 U	63 U	630 U
LL10-1	8/24/2006	LL10-10-05	0-0.5	1.2 J	2.4 U	0.86 J	24 U	240 U
LL10-1	8/24/2006	LL10-105-20	0.5-2	5.8	2.5 U	2.5 U	25 U	250 U
LL12-2	8/17/2006	LL12-20-05	0-0.5	1.7 U	1.7 U	1.7 U	17 U	170 U
LL12-2	8/17/2006	LL12-205-20	0.5-2	1.7 U	1.7 U	1.7 U	17 U	170 U
LL14-1	8/16/2006	LL14-10-05	0-0.5	1.3 J	2.4 U	2.4 U	24 UJ	240 U
LL14-1	8/16/2006	LL14-105-20	0.5-2	2.7 U	2.7 U	2.7 U	27 UJ	270 U
LL16-2	8/22/2006	LL16-20-05	0-0.5	7.1 J	2.5 U	2.5 U	82 JN	250 U
LL16-2	8/22/2006	LL16-205-20	0.5-2	3.7 J	2.5 U	2.5 U	25 U	250 U
LL16-2	8/22/2006	LLDUP-6	0.5-2	3.3 J	2.5 U	1.5 J	25 U	250 U

See Notes on Page 6.

Table B-12
Lowland Soil Pesticide/Herbicide Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval (ft)	gamma-Chlordane (µg/kg)	Heptachlor (µg/kg)	Heptachlor epoxide (µg/kg)	Methoxychlor (µg/kg)	Toxaphene (µg/kg)
Goose Lake								
GLBF-01	9/27/2006	GLBF-01-0-0.5	0-0.5	2.7 U	2.7 U	2.7 U	27 U	270 U
GLBF-01	9/27/2006	GLBF-01-0.5-2.0	0.5-2	2.7 U	2.7 U	2.7 U	27 U	270 U
GLBF-02	9/27/2006	GLBF-02-0-0.5	0-0.5	2.1 U	2.1 U	2.1 U	21 U	210 U
GLBF-02	9/27/2006	GLBF-02-0.5-2.0	0.5-2	2.6 U	2.6 U	2.6 U	26 U	260 U
GLBF-03	9/26/2006	GLBF-03-0-0.5	0-0.5	2.0 U	2.0 U	2.0 U	20 U	200 U
GLBF-03	9/26/2006	GLBF-03-0.5-2.0	0.5-2	2.1 U	2.1 U	2.1 U	21 U	210 U
GLBF-04	9/26/2006	GLBF-04-0-0.5	0-0.5	2.0 U	2.0 U	2.0 U	20 U	200 U
GLBF-04	9/26/2006	GLBF-04-0.5-2.0	0.5-2	2.0 U	2.0 U	2.0 U	20 U	200 U
GLBF-04	9/27/2006	GLBF-DUP-1	0.5-2	2.0 U	2.0 U	2.0 U	20 U	200 U
GLBF-05	9/26/2006	GLBF-05-0-0.5	0-0.5	2.9 U	2.9 U	2.9 U	29 U	290 U
GLBF-05	9/27/2006	GLBF-05-0.5-2.0	0.5-2	2.6 U	2.6 U	2.6 U	26 U	260 U
GLBF-06	9/26/2006	GLBF-06-0-0.5	0-0.5	0.92 J	3.0 U	3.0 U	30 U	300 U
GLBF-06	9/26/2006	GLBF-06-0.5-2.0	0.5-2	1.1 J	2.7 U	2.7 U	27 U	270 U
GLBF-06	9/27/2006	GLBF-DUP-2	0.5-2	0.52 J	2.8 U	2.8 U	28 U	280 U
GLBF-07	9/26/2006	GLBF-07-0-0.5	0-0.5	1.5 J	2.5 U	2.5 U	25 U	250 U
GLBF-07	9/26/2006	GLBF-07-0.5-2.0	0.5-2	1.7 J	2.6 U	2.6 U	26 U	260 U
GLBF-08	9/27/2006	GLBF-08-0-0.5	0-0.5	1.2 JN	2.5 U	2.5 U	25 U	250 U
GLBF-08	9/27/2006	GLBF-08-0.5-2.0	0.5-2	3.4 J	2.7 U	2.7 U	27 U	270 U
GLBF-09	9/27/2006	GLBF-09-0-0.5	0-0.5	1.4 JN	2.7 U	2.7 U	27 U	270 U
GLBF-09	9/27/2006	GLBF-09-0.5-2.0	0.5-2	2.5 J	2.5 U	2.5 U	25 U	250 U
GLBF-10	9/27/2006	GLBF-10-0-0.5	0-0.5	0.75 J	2.5 U	2.5 U	25 U	250 U
GLBF-10	9/27/2006	GLBF-10-0.5-2.0	0.5-2	0.73 JN	2.6 U	2.6 U	26 U	260 U

Notes:
Concentrations are reported on a dry-weight basis.
Non-detect values reported at the reporting limit.
J - estimated value
JN - The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.
The associated numerical value is an estimated concentration only.
R - rejected
U - The analyte was analyzed for, but not detected.
UJ - The analyte was analyzed for, but not detected. Detection limit is estimated.
µg/kg - micrograms per kilogram

Table B-13
Lowland Soil PCB Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval (ft)	Aroclor 1016 (mg/kg)	Aroclor 1221 (mg/kg)	Aroclor 1232 (mg/kg)	Aroclor 1242 (mg/kg)	Aroclor 1248 (mg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)	Total PCBs (mg/kg)
DePue Lake											
LL1-1	8/23/2006	LL1-10-05	0-0.5	0.053 U	0.11 U	0.053 U	0.053 U	0.053 U	0.053 U	0.053 U	0.11 U
LL1-1	8/23/2006	LL1-105-20	0.5-2	0.049 U	0.10 U	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	0.10 U
LL4-3	8/24/2006	LL4-30-05	0-0.5	0.039 U	0.080 U	0.039 U	0.039 U	0.039 U	0.039 U	0.039 U	0.080 U
LL4-3	8/24/2006	LL4-305-20	0.5-2	0.040 U	0.082 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.082 U
LL5-1	8/24/2006	LL5-10-05	0-0.5	0.055 U	0.11 U	0.055 U	0.055 U	0.055 U	0.055 U	0.055 U	0.11 U
LL5-1	8/24/2006	LL5-105-20	0.5-2	0.051 U	0.10 U	0.051 U	0.051 U	0.051 U	0.051 U	0.051 U	0.10 U
LL7-2	8/17/2006	LL7-20-05	0-0.5	0.055 U	0.11 U	0.055 U	0.055 U	0.055 U	R	0.055 U	0.11 U
LL7-2	8/17/2006	LL7-205-20	0.5-2	0.033 U	0.067 U	0.033 U	0.033 U	0.033 U	0.053 J	0.033 U	0.053
LL7-4	8/17/2006	LL7-40-05	0-0.5	0.065 U	0.13 U	0.065 U	0.065 U	0.065 U	0.15 J	0.065 U	0.15
LL7-4	8/17/2006	LL7-405-20	0.5-2	0.12 U	0.25 U	0.12 U	0.12 U	0.12 U	0.046 J	0.12 U	0.046
LL10-1	8/24/2006	LL10-10-05	0-0.5	0.046 U	0.094 U	0.046 U	0.046 U	0.046 U	0.046 U	0.046 U	0.094 U
LL10-1	8/24/2006	LL10-105-20	0.5-2	0.049 U	0.10 U	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	0.10 U
LL12-2	8/17/2006	LL12-20-05	0-0.5	0.033 U	0.067 U	0.033 U	0.033 U	0.033 U	0.26	0.050	0.31
LL12-2	8/17/2006	LL12-205-20	0.5-2	0.033 U	0.067 U	0.033 U	0.033 U	0.033 U	0.024 J	0.033 U	0.024
LL14-1	8/16/2006	LL14-10-05	0-0.5	0.047 U	0.096 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	0.096 U
LL14-1	8/16/2006	LL14-105-20	0.5-2	0.052 U	0.10 U	0.052 U	0.052 U	0.052 U	0.052 U	0.052 U	0.10 U
LL16-2	8/22/2006	LL16-20-05	0-0.5	0.048 U	0.097 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.097 U
LL16-2	8/22/2006	LL16-205-20	0.5-2	0.049 U	0.10 U	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	0.10 U
LL16-2	8/22/2006	LLDUP-6	0.5-2	0.049 U	0.099 U	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	0.099 U

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Table B-13
Lowland Soil PCB Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval (ft)	Aroclor 1016 (mg/kg)	Aroclor 1221 (mg/kg)	Aroclor 1232 (mg/kg)	Aroclor 1242 (mg/kg)	Aroclor 1248 (mg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)	Total PCBs (mg/kg)
Goose Lake											
GLBF-01	9/27/2006	GLBF-01-0-0.5	0-0.5	0.052 U	0.11 U	0.052 U	0.052 U	0.052 U	0.052 U	0.052 U	0.11 U
GLBF-01	9/27/2006	GLBF-01-0.5-2.0	0.5-2	0.052 U	0.11 U	0.052 U	0.052 U	0.052 U	0.052 U	0.052 U	0.11 U
GLBF-02	9/27/2006	GLBF-02-0-0.5	0-0.5	0.041 U	0.083 U	0.041 U	0.041 U	0.041 U	0.041 U	0.041 U	0.083 U
GLBF-02	9/27/2006	GLBF-02-0.5-2.0	0.5-2	0.050 U	0.10 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.10 U
GLBF-03	9/26/2006	GLBF-03-0-0.5	0-0.5	0.039 U	0.080 U	0.039 U	0.039 U	0.039 U	0.039 U	0.039 U	0.080 U
GLBF-03	9/26/2006	GLBF-03-0.5-2.0	0.5-2	0.040 U	0.082 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.082 U
GLBF-04	9/26/2006	GLBF-04-0-0.5	0-0.5	0.038 U	0.078 U	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U	0.078 U
GLBF-04	9/26/2006	GLBF-04-0.5-2.0	0.5-2	0.039 U	0.079 U	0.039 U	0.039 U	0.039 U	0.039 U	0.039 U	0.079 U
GLBF-04	9/27/2006	GLBF-DUP-1	0.5-2	0.038 U	0.078 U	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U	0.078 U
GLBF-05	9/26/2006	GLBF-05-0-0.5	0-0.5	0.057 U	0.12 U	0.057 U	0.057 U	0.057 U	0.057 U	0.057 U	0.12 U
GLBF-05	9/27/2006	GLBF-05-0.5-2.0	0.5-2	0.051 U	0.10 U	0.051 U	0.051 U	0.051 U	0.051 U	0.051 U	0.10 U
GLBF-06	9/26/2006	GLBF-06-0-0.5	0-0.5	0.058 U	0.12 U	0.058 U	0.058 U	0.058 U	0.058 U	0.058 U	0.12 U
GLBF-06	9/26/2006	GLBF-06-0.5-2.0	0.5-2	0.052 U	0.11 U	0.052 U	0.052 U	0.052 U	0.052 U	0.052 U	0.11 U
GLBF-06	9/27/2006	GLBF-DUP-2	0.5-2	0.054 U	0.11 U	0.054 U	0.054 U	0.054 U	0.054 U	0.054 U	0.11 U
GLBF-07	9/26/2006	GLBF-07-0-0.5	0-0.5	0.049 U	0.10 U	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	0.10 U
GLBF-07	9/26/2006	GLBF-07-0.5-2.0	0.5-2	0.051 U	0.10 U	0.051 U	0.051 U	0.051 U	0.051 U	0.051 U	0.10 U
GLBF-08	9/27/2006	GLBF-08-0-0.5	0-0.5	0.049 U	0.099 U	0.049 U	0.049 U	0.049 U	0.024 J	0.049 U	0.024
GLBF-08	9/27/2006	GLBF-08-0.5-2.0	0.5-2	0.052 U	0.10 U	0.052 U	0.052 U	0.052 U	0.077	0.052 U	0.077
GLBF-09	9/27/2006	GLBF-09-0-0.5	0-0.5	0.053 U	0.11 U	0.053 U	0.053 U	0.053 U	0.044 J	0.053 U	0.044
GLBF-09	9/27/2006	GLBF-09-0.5-2.0	0.5-2	0.049 U	0.10 U	0.049 U	0.049 U	0.049 U	0.037 J	0.049 U	0.037
GLBF-10	9/27/2006	GLBF-10-0-0.5	0-0.5	0.049 U	0.10 U	0.049 U	0.049 U	0.049 U	0.018 J	0.049 U	0.018
GLBF-10	9/27/2006	GLBF-10-0.5-2.0	0.5-2	0.050 U	0.10 U	0.050 U	0.050 U	0.050 U	0.033 J	0.050 U	0.033

Notes:
Concentrations are reported on a dry-weight basis.
Non-detect values reported at the reporting limit.
J - estimated value
R - rejected
U - The analyte was analyzed for, but not detected.
mg/kg - milligrams per kilogram

Table B-14
Sediment TAL Metals and Cyanide Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval	Aluminum (mg/kg)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Calcium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Cyanide (mg/kg)	Iron (mg/kg)
DePue Lake															
C5	4/6/2007	C5-0-0.5	0-0.5	16,600	R	9.0	188	0.91 J	9.8	24,100	47	12	67	NA	28,400
C5	4/6/2007	C5-0.5-1.0	0.5-1	18,000	R	8.2	316	1.1	21	24,700	69	13	80	NA	32,600
C5	4/6/2007	C5-1.0-2.0	1-2	16,500	R	12	315	0.95	7.1	16,700	41	12	49	NA	32,400
C6	4/6/2007	C6-0-0.5	0-0.5	17,700	R	11	173	0.99	6.6	19,300	51	12	59	NA	29,700
C6	4/6/2007	C6-0.5-1.0	0.5-1	13,700	R	7.4	136	0.77 J	4.3	24,600	36	11	49	NA	23,800
C6	4/6/2007	C6-1.0-1.5	1-1.5	16,100	R	10	281	1.0	29	27,000	82	15	84	NA	27,300
D5	4/18/2007	D5-0-0.5	0-0.5	19,100	14 UJ	12	203 J	0.99 J	11	39,100	48	13 J	76	0.35 U	29,900
D5	4/18/2007	D5-0.5-1.0	0.5-1	18,500	R	8.4	240 J	1.0	14	19,300	71	12 J	75	NA	30,400
D5	4/18/2007	D5-1.0-1.7	1-1.7	19,400	R	15	341 J	1.0	13	25,500	71	12 J	73	NA	30,400
D6	4/14/2007	D6-0-0.5	0-0.5	18,400	R	9.9	232 J	1.0	6.0	15,100	57	11	63	NA	30,500
D6	4/14/2007	D6-0.5-1.0	0.5-1	14,300	R	6.9	139 J	0.84	1.6	7,960	27	10	32	NA	22,700
D6	4/14/2007	D6-1.0-1.5	1-1.5	14,600	R	4.3	136 J	0.89	0.75	5,690	23	10	26	NA	24,400
D6	4/14/2007	D6-2.0-4.0	2-4	8,210	R	3.5	62	0.46 J	0.69	51,100	15	6.1	16	NA	14,500
D6	4/14/2007	D6-4.0-6.0	4-6	8,600	R	4.3	66	0.50 J	0.68	50,200	15	7.3	17	NA	15,900
D6	4/14/2007	D6-6.0-8.0	6-8	7,310	R	2.1	51	0.42 J	0.55	60,100	13	6.5	16	NA	14,600
D6	4/14/2007	DUP-007	6-8	7,260	R	2.0	51	0.43 J	0.64	57,700	13	6.6	17	NA	14,700
D6	4/14/2007	D6-8.0-10.0	8-10	5,650	R	2.4	43	0.34 J	0.50 J	52,300	11	5.9	13	NA	12,200
D6	4/14/2007	D6-10.0-12.0	10-12	5,720	7.7 UJ	2.9	42	0.35 J	0.38 J	54,800	11	6.1 J	13	NA	14,000
D6	4/14/2007	D6-12.0-14.0	12-14	8,870	R	4.0	63	0.48 J	0.41 J	47,100	15	6.8	17	NA	16,400
D6	4/14/2007	D6-14.0-16.0	14-16	5,840	8.1 UJ	3.2	51	0.36 J	0.43 J	55,300	11	6.1 J	13	NA	13,800
D6	4/14/2007	D6-16.0-16.5	16-16.5	7,050	R	2.9	74	0.44 J	0.54 J	61,600	13	7.3	15	NA	17,300
D7	4/17/2007	D7-0-0.5	0-0.5	13,000	14 UJ	7.2	152 J	0.81 J	5.0	41,000	37	9.3 J	56	6.0 U	24,300
D7	4/17/2007	D7-0.5-1.0	0.5-1	15,200	11 UJ	5.5	168 J	0.91	6.5	22,800	57	11	73	NA	26,500
D7	4/17/2007	D7-1.0-1.8	1-1.8	14,900	11 UJ	11	220	0.92 J	14	20,900	70	11	71	NA	26,300
D8	4/11/2007	D8-0-0.5	0-0.5	14,500	R	6.8	138	0.81 J	3.0 J	34,700	39	10 J	49	NA	24,800
D8	4/11/2007	D8-0.5-1.0	0.5-1	16,100	R	6.8	136	0.88	3.3 J	28,600	43	11 J	50	NA	26,100
D8	4/11/2007	D8-1.0-1.6	1-1.6	17,500	R	9.1	164	0.97	6.8 J	22,500	63	12 J	69	NA	27,300
D9	4/17/2007	D9-0-0.5	0-0.5	3,240	8.2 UJ	3.1	50 J	0.27 J	1.3	39,100	12	5.3 J	15	4.4 U	12,200
D9	4/17/2007	D9-0.5-1.0	0.5-1	10,200	8.6 UJ	7.1	120	0.66 J	3.7	28,600	36	8.8	48	NA	20,300
D9	4/17/2007	D9-1.0-1.65	1-1.65	11,300	10 UJ	7.7	135 J	0.73 J	6.3	29,700	50	10	65	NA	22,800
E4	4/6/2007	E4-0-0.5	0-0.5	16,100	R	11	284	0.94 J	24	30,500	51	14	87	NA	30,800
E4	4/6/2007	E4-0.5-1.0	0.5-1	13,600	R	16	453	0.91 J	12	21,200	40	12	51	NA	27,400
E4	4/6/2007	E4-1.0-2.0	1-2	13,300	R	13	420	0.83 J	7.4	20,400	37	8.5 J	40	NA	22,700

See Notes on Page 22.

Table B-14
Sediment TAL Metals and Cyanide Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval	Aluminum (mg/kg)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Calcium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Cyanide (mg/kg)	Iron (mg/kg)
E5	4/6/2007	E5-0-0.5	0-0.5	16,400	R	7.4	152	0.90 J	4.6	17,900	40	12	54	NA	26,600
E5	4/6/2007	E5-0.5-1.0	0.5-1	17,500	R	7.7	150	0.97	4.6	18,600	44	12	62	NA	27,700
E5	4/6/2007	E5-1.0-1.9	1-1.9	18,100	R	11	270	1.0	14	20,000	66	12	68	NA	30,000
E6	4/6/2007	E6-0-0.5	0-0.5	15,000	R	8.5	150	0.84	4.2	29,800	39	12	52	NA	27,000
E6	4/6/2007	E6-0.5-1.0	0.5-1	16,100	R	7.4	148	0.91	4.2	20,800	45	12	58	NA	27,300
E6	4/6/2007	E6-1.0-1.6	1-1.6	16,300	R	8.7	191	0.95	10	18,400	62	13	70	NA	28,400
E7	4/17/2007	E7-0-0.5	0-0.5	14,600	10 UJ	5.7	139 J	0.81 J	4.8	33,500	38	9.6 J	50	NA	23,700
E7	4/17/2007	E7-0.5-1.0	0.5-1	16,800	11 UJ	8.2	163 J	0.93	5.6	25,500	48	10 J	63	NA	25,800
E7	4/17/2007	E7-1.0-2.0	1-2	17,200	10 UJ	9.9	209 J	1.0	19	21,300	80	13 J	78	NA	27,700
E7	4/17/2007	DUP-013	1-2	17,500	11 UJ	9.4	206 J	1.1	18	20,700	83	13 J	81	NA	27,900
E7	4/17/2007	E7-2-4	2-4	13,500	R	4.8	142	0.86	4.6	11,100	33	11	33	NA	26,600
E7	4/17/2007	E7-4-6	4-6	7,820	7.7 UJ	4.0	71	0.49 J	0.51 J	29,800	14	7.9	14	NA	16,400
E7	4/17/2007	DUP-015	4-6	6,920	7.2 UJ	3.6	61	0.42 J	0.54 J	31,400	13	7.0	13	NA	14,600
E7	4/17/2007	E7-6-8	6-8	5,190	7.3 UJ	4.2	38	0.33 J	0.36 J	47,500	9.6	6.6	11	NA	12,200
E7	4/17/2007	E7-8-10	8-10	955	6.6 UJ	1.2	8.3 J	0.093 J	0.18 J	29,200	3.2	1.5 J	2.5 J	NA	4,090
E7	4/17/2007	E7-10-12.2	10-12.2	1,430	6.4 UJ	1.1	7.1 J	0.066 J	0.54 U	14,000	2.9	1.9 J	3.2	NA	3,250
E8	4/11/2007	E8-0-0.5	0-0.5	12,100	R	7.0	135	0.70 J	2.2 J	41,300	36	9.6 J	44	NA	23,300
E8	4/11/2007	E8-0.5-1.0	0.5-1	12,800	R	8.0	132	0.72 J	2.6 J	38,100	35	10 J	44	NA	24,500
E8	4/11/2007	E8-1.0-2.0	1-2	14,900	R	7.9	139	0.80 J	5.0 J	29,700	44	11 J	57	NA	24,900
E9	4/11/2007	E9-0-0.5	0-0.5	9,410	10 UJ	5.2	117	0.51 J	2.7	47,400	29	7.1 J	40	NA	19,900
E9	4/11/2007	E9-0.5-1.0	0.5-1	9,760	9.6 UJ	5.5	116	0.53 J	2.8	47,800	29	7.7 J	40	NA	19,600
E9	4/11/2007	E9-1.0-1.9	1-1.9	16,600	10 UJ	8.1	147	0.79 J	5.2	32,200	44	11	59	NA	25,400
F4	4/14/2007	F4-0-0.5	0-0.5	17,200	R	9.2	196 J	0.91 J	10	35,300	44	11 J	69	NA	27,500
F4	4/14/2007	F4-0.5-1.0	0.5-1	17,600	R	8.1	355 J	1.0	31	28,200	73	12	79	NA	30,400
F4	4/14/2007	F4-1.0-1.5	1-1.5	19,100	R	17	547 J	1.0	13	25,200	60	10	71	NA	29,600
F4	4/14/2007	F4-2.0-4.0	2-4	7,440	R	15	131	0.49 J	0.48 J	27,700	13	5.2 J	14	NA	22,600
F4	4/14/2007	F4-4.0-6.0	4-6	4,430	R	4.1	58	0.28 J	0.45 J	40,100	8.7	3.9 J	9.1	NA	9,790
F4	4/14/2007	F4-6.0-8.0	6-8	6,160	R	7.8	74	0.38 J	0.57 J	53,100	12	5.9 J	14	NA	14,100
F4	4/14/2007	F4-8.0-10.0	8-10	10,900	7.9 UJ	3.1	146	0.65 J	0.65 J	35,100	19	11	20	NA	32,500
F4	4/14/2007	F4-10.0-12.0	10-12	9,860	7.9 UJ	4.8	104	0.59 J	0.62 J	46,500	17	8.9	19	NA	21,200
F4	4/14/2007	F4-12.0-13.0	12-13	8,740	7.6 UJ	8.7	104 J	0.59 J	0.63 J	51,400	15	11	19	NA	21,900
F6	4/6/2007	F6-0-0.5	0-0.5	13,300	R	7.5	145	0.79 J	4.3	34,600	38	11	56	NA	24,400
F6	4/6/2007	F6-0.5-1.0	0.5-1	15,200	R	8.7	154	0.87	5.2	21,500	47	12	62	NA	25,600
F6	4/6/2007	F6-1.0-2.0	1-2	16,900	R	8.6	246	0.98	11	18,900	65	12	72	NA	28,300
F7	4/17/2007	F7-0-0.5	0-0.5	11,000	12 UJ	7.3	140 J	0.70 J	4.3	44,200	34	9.2 J	55	5.6 U	22,100
F7	4/17/2007	F7-0.5-1.0	0.5-1	13,000	11 UJ	6.1	144 J	0.80 J	5.4	29,400	43	11	68	NA	23,700
F7	4/17/2007	F7-1.0-1.9	1-1.9	14,400	11 UJ	9.6	203 J	0.93 J	17	20,800	69	13	77	NA	26,300

See Notes on Page 22.

Table B-14
Sediment TAL Metals and Cyanide Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval	Aluminum (mg/kg)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Calcium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Cyanide (mg/kg)	Iron (mg/kg)
F8	4/17/2007	F8-0-0.5	0-0.5	10,500	12 UJ	7.0	129 J	0.72 J	3.7	47,900	33	9.3 J	52	NA	21,600
F8	4/17/2007	F8-0.5-1.0	0.5-1	11,600	11 UJ	7.6	128	0.74 J	4.4	41,600	35	10	52	NA	23,100
F8	4/17/2007	F8-1.0-2.0	1-2	15,300	11 UJ	8.5	154 J	0.90 J	6.7	27,600	46	12	72	NA	26,200
F8	4/17/2007	F8-2-4	2-4	20,900	11 UJ	9.0	190 J	1.1	11	20,600	67	13 J	74	NA	29,900
F8	4/17/2007	F8-4-6	4-6	18,100	12 UJ	12	273 J	1.1	40	23,400	91	12 J	89	NA	28,700
F8	4/17/2007	F8-6-8	6-8	17,200	11 UJ	11	264 J	1.1	14	19,700	65	11 J	68	NA	28,800
F8	4/17/2007	DUP-014	6-8	15,900	R	9.9	242 J	0.96	13	18,200	60	9.9 J	64	NA	26,400
F8	4/17/2007	F8-8-10	8-10	17,200	9.8 UJ	15	301 J	0.91	12	16,100	55	8.9 J	63	NA	25,900
F8	4/17/2007	F8-10-12	10-12	15,400	R	20	229 J	0.99	9.8	17,500	49	9.9 J	65	NA	28,300
F8	4/17/2007	F8-12-14	12-14	13,900	R	7.6	142 J	0.89	1.4	19,500	23	9.8 J	30	NA	26,600
F8	4/17/2007	F8-14-14.8	14-14.8	10,200	10 UJ	3.1	105 J	0.73 J	0.53 J	33,500	17	9.8 J	21	NA	23,300
F9	4/11/2007	F9-0-0.5	0-0.5	14,000	R	8.0	135	0.77 J	4.8 J	38,900	39	12 J	54	NA	26,200
F9	4/11/2007	F9-0.5-1.0	0.5-1	13,300	R	7.7	131	0.75 J	4.4 J	39,400	38	11 J	54	NA	24,300
F9	4/11/2007	F9-1.0-2.0	1-2	21,300	R	9.4	184	1.1	8.2 J	17,200	68	14 J	70	NA	31,100
G6	4/6/2007	G6-0-0.5	0-0.5	13,300	R	6.6	136	0.74 J	5.3	37,500	36	10	54	NA	23,500
G6	4/6/2007	G6-0.5-1.0	0.5-1	19,600	R	11	202	1.1	7.9	35,000	56	15	77	NA	34,000
G6	4/6/2007	G6-1.0-1.5	1-1.5	17,300	R	10	231	1.0	16	19,300	71	14	76	NA	29,300
G7	4/10/2007	G7-0-0.5	0-0.5	12,500	R	8.3	152	0.77 J	7.6	36,700	34	14	56	NA	25,400
G7	4/10/2007	G7-0.5-1.0	0.5-1	10,900	R	5.9	113	0.72 J	5.7	18,100	24	13	32	NA	25,600
G7	4/10/2007	G7-1.0-1.3	1-1.3	10,900	R	1.5	100	0.74	0.36 J	15,900	19	10	19	NA	25,800
G8	4/24/2007	G8-0-0.5	0-0.5	11,000	15 UJ	6.4	116	0.62 J	10 J	32,700	29	9.1 J	76	6.3 U	18,500
G8	4/24/2007	G8-0.5-1.0	0.5-1	15,100	13 UJ	8.7	135	0.83 J	7.3 J	34,200	40	13 J	59	NA	25,100
G8	4/24/2007	G8-1.0-1.9	1-1.9	16,800	13 UJ	9.6	157	0.94 J	7.1 J	25,600	48	13 J	83	NA	27,700
G9	4/10/2007	G9-0-0.5	0-0.5	17,000	R	11	185	0.91	1.9	28,400	41	12 J	46	NA	29,900
G9	4/10/2007	G9-0.5-1.0	0.5-1	17,500	R	9.8	163	0.92	4.0	20,500	49	10 J	61	NA	27,800
G9	4/10/2007	G9-1.0-1.5	1-1.5	18,900	R	9.0	175	0.98	6.0	17,900	58	11 J	64	NA	28,600
H3	4/6/2007	H3-0-0.5	0-0.5	18,000	R	11	199	0.95 J	15	47,500	43	13 J	77	NA	29,400
H3	4/6/2007	H3-0.5-1.0	0.5-1	20,300	R	11	236	1.0	13	23,200	56	13	72	NA	29,900
H3	4/6/2007	H3-1.0-2.0	1-2	19,600	R	14	545	1.1	25	28,600	63	12	71	NA	30,200
H6	4/10/2007	H6-0-0.6	0-0.6	10,400	R	6.3	112	0.68 J	3.9	10,500	20	11	23	NA	22,700
H7	4/17/2007	H7-0-0.5	0-0.5	15,400	16 UJ	8.2	165 J	0.94 J	8.7	48,900	42	12 J	83	NA	27,800
H7	4/17/2007	H7-0.5-1.0	0.5-1	14,400	13 UJ	8.1	139 J	0.86 J	8.0	32,700	37	13	65	NA	25,000
H7	4/17/2007	H7-1.0-1.9	1-1.9	17,900	13 UJ	9.6	171 J	1.0 J	11	26,000	47	15	97	NA	28,900
H7	4/17/2007	H7-2-4	2-4	18,400	12 UJ	9.2	188 J	1.1	11	18,400	59	14 J	77	NA	29,000
H7	4/17/2007	H7-4-6	4-6	17,800	R	11	293 J	1.2	62	21,000	87	15 J	106	NA	29,200
H7	4/17/2007	H7-6-8	6-8	17,400	12 UJ	11	365 J	1.1	25	18,000	69	11 J	76	NA	29,200
H7	4/17/2007	H7-8-10	8-10	17,900	11 UJ	15	426 J	1.1	20	16,700	57	11 J	71	NA	29,300
H7	4/17/2007	H7-10-12	10-12	17,000	11 UJ	21	399 J	1.1	13	14,800	50	10 J	68	NA	29,300
H7	4/17/2007	H7-12-14	12-14	15,900	9.6 UJ	14	162 J	1.0	7.0	17,500	37	11 J	50	NA	29,200
H7	4/17/2007	H7-14-15.4	14-15.4	15,400	11 UJ	7.0	155 J	1.0	0.82 J	16,900	24	11 J	29	NA	28,600

See Notes on Page 22.

Table B-14
Sediment TAL Metals and Cyanide Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval	Aluminum (mg/kg)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Calcium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Cyanide (mg/kg)	Iron (mg/kg)
H8	4/10/2007	H8-0-0.5	0-0.5	16,800	R	9.0	157	0.90 J	5.9	23,600	47	12 J	67	NA	26,800
H8	4/10/2007	H8-0.5-1.0	0.5-1	12,900	R	5.7	134	0.79	3.9	11,900	31	11 J	39	NA	24,800
H8	4/10/2007	H8-1.0-1.3	1-1.3	12,700	R	3.8	135	0.90	0.55 J	4,370	21	13 J	22	NA	28,600
I5	4/11/2007	I5-0-0.5	0-0.5	19,000	0.64 J	9.1	189	0.94 J	13	43,400	44	13 J	106	NA	29,300
I5	4/11/2007	I5-0.5-1.0	0.5-1	20,700	14 UJ	9.4	182	0.98 J	15	34,400	46	16	103	NA	30,400
I5	4/11/2007	I5-1.0-2.0	1-2	22,500	0.90 J	12	197	1.1 J	15	23,000	53	17	110	NA	32,100
I6	4/24/2007	I6-0-0.5	0-0.5	16,800	17 UJ	8.8	162	0.92 J	11 J	43,400	42	13 J	92	NA	27,600
I6	4/24/2007	I6-0.5-1.0	0.5-1	17,300	14 UJ	8.9	160	0.91 J	11 J	42,100	42	13 J	91	NA	28,400
I6	4/24/2007	I6-1.0-2.0	1-2	20,800	12 UJ	10	182	1.1	11 J	18,800	58	15 J	78	NA	30,000
I7	4/10/2007	I7-0-0.5	0-0.5	18,900	R	8.1	156	1.0 J	8.0	26,700	44	14	65	NA	29,100
I7	4/10/2007	I7-0.5-1.0	0.5-1	18,900	R	10	162	1.0	7.3	22,400	53	13	81	NA	29,800
I7	4/10/2007	I7-1.0-2.0	1-2	19,800	R	8.6	173	1.1	7.1	19,000	57	14	73	NA	30,700
I7	4/10/2007	DUP-001	1-2	19,800	R	8.2	170	1.1	7.5	18,600	56	13	74	NA	31,200
J3	4/17/2007	J3-0-0.5	0-0.5	997	7.0 UJ	2.4	276 J	0.14 J	4.0	44,500	3.3	1.8 J	11	NA	4,530
J3	4/17/2007	J3-0.5-1.0	0.5-1	6,460	7.6 UJ	6.2	1,020 J	0.46 J	11	21,800	14	6.4 J	20	NA	13,500
J3	4/17/2007	J3-1.0-1.9	1-1.9	5,220	0.20 UJ	4.9	1,340 J	0.36 J	17	20,400	14	5.1 J	23	NA	10,900
J3	4/17/2007	J3-2-4	2-4	6,570	R	4.7	208 J	0.48 J	1.2	48,200	12	7.1 J	14	NA	15,700
J3	4/17/2007	J3-4-6	4-6	5,040	6.6 UJ	4.8	125 J	0.36 J	0.61	61,200	8.9	6.1 J	11	NA	12,800
J3	4/17/2007	J3-6-8	6-8	10,100	6.3 UJ	2.5	124 J	0.74	0.16 J	11,100	16	9.3 J	18	NA	22,600
J3	4/17/2007	J3-8-10	8-10	9,180	7.2 UJ	0.90 J	126 J	0.66	0.15 J	48,200	15	8.8 J	17	NA	17,900
J3	4/17/2007	J3-10-12	10-12	8,500	6.6 UJ	2.9	95 J	0.61	0.46 J	61,000	14	8.4 J	18	NA	27,400
J3	4/17/2007	J3-12-12.6	12-12.6	8,190	7.3 UJ	7.7	93 J	0.58 J	0.46 J	74,100	14	9.2 J	16	NA	18,500
J4	4/24/2007	J4-0-0.5	0-0.5	22,600	17 UJ	11	204	1.2 J	7.9 J	33,200	62	16 J	90	7.0 U	35,700
J4	4/24/2007	J4-0.5-1.0	0.5-1	18,300	13 UJ	10	166	0.95 J	19 J	30,100	44	18 J	101	NA	28,700
J4	4/24/2007	J4-1.0-1.5	1-1.5	18,900	13 UJ	12	169	0.99 J	15 J	20,600	47	16 J	122	NA	28,700
J5	4/17/2007	J5-0-0.5	0-0.5	17,600	15 UJ	8.0	171 J	0.95 J	12	43,500	42	13 J	92	NA	27,000
J5	4/17/2007	J5-0.5-1.0	0.5-1	21,400	10 UJ	8.3	174 J	1.1	5.2	16,900	52	11 J	72	NA	29,300
J5	4/17/2007	J5-1.0-1.9	1-1.9	22,300	12 UJ	9.5	208 J	1.2	11	16,600	74	12 J	75	NA	30,600
J5	4/17/2007	J5-2-4	2-4	18,600	11 UJ	9.9	270 J	1.1	44	18,700	82	13 J	90	NA	27,900
J5	4/17/2007	J5-4-6	4-6	19,700	11 UJ	10	279 J	1.1	18	15,000	74	10 J	77	NA	29,000
J5	4/17/2007	J5-6-8	6-8	20,900	11 UJ	18	484 J	1.1	14	15,700	55	10 J	69	NA	30,700
J5	4/17/2007	J5-8-10	8-10	18,100	R	14	192 J	1.0	8.3	18,000	42	10 J	53	NA	28,700
J5	4/17/2007	J5-10-11.9	10-11.9	17,600	R	6.5	152 J	0.97	1.1	18,300	26	10 J	28	NA	27,600
J6	4/24/2007	J6-0-0.5	0-0.5	14,900	13 UJ	8.8	152	0.89 J	7.8 J	42,300	42	13 J	71	0.58 J	26,400
J6	4/24/2007	J6-0.5-1.0	0.5-1	7,220	11 UJ	3.6	78	0.42 J	2.4 J	25,100	20	5.6 J	31	NA	13,100
J6	4/24/2007	J6-1.0-1.9	1-1.9	15,100	10 UJ	9.6	218	0.90	21 J	18,000	71	17 J	76	NA	26,100
K.5-1.5	4/11/2007	K-5-1.5-0-0.5	0-0.5	14,200	R	10	293	0.79 J	22 J	36,600	35	14 J	136	NA	25,900
K.5-1.5	4/11/2007	K-5-1.5-0.5-1.0	0.5-1	9,470	R	11	170	0.66 J	7.6 J	28,900	20	10 J	51	NA	21,400
K.5-1.5	4/11/2007	K-5-1.5-1.0-1.8	1-1.8	6,680	R	8.9	111	0.47 J	4.6 J	28,300	13	8.2 J	27	NA	15,700
K.5-2	4/12/2007	K.5-2-0-0.5	0-0.5	18,000	1.1 J	9.0	209	0.83 J	21	39,600	43	12 J	143	NA	27,400
K.5-2	4/12/2007	K.5-2-0.5-1.0	0.5-1	20,200	15 UJ	10	224	0.94 J	20	35,300	45	14	160	NA	30,000
K.5-2	4/12/2007	K.5-2-1.0-1.7	1-1.7	17,200	14 UJ	9.2	178	0.80 J	20	24,000	39	15	126	NA	26,200
K-1.5	4/18/2007	K1.5-0-0.5	0-0.5	2,720	7.2 UJ	4.2	124 J	0.20 J	7.3	24,900	13	4.3 J	24	0.22 U	10,600
K-1.5	4/18/2007	K1.5-0.5-1.0	0.5-1	11,300	10 UJ	13	872 J	0.70 J	86	23,000	49	14 J	126	NA	22,000
K-1.5	4/18/2007	K1.5-1.0-2.0	1-2	15,000	R	13	1,380 J	0.85	59	21,800	57	13 J	128	NA	25,800

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Table B-14
Sediment TAL Metals and Cyanide Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval	Aluminum (mg/kg)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Calcium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Cyanide (mg/kg)	Iron (mg/kg)
K2	4/15/2007	K2-0-0.5	0-0.5	7,440	8.2 UJ	8.3	1,250	0.48 J	37	27,500	22	7.8	64	4.3 U	15,500
K2	4/15/2007	K2-0-0.5-1.0	0.5-1	10,500	9.7 UJ	8.4	1,730	0.66 J	35	20,100	34	7.0 J	52	0.69 J	18,100
K2	4/15/2007	K2-0-1.0-1.9	1-1.9	9,380	R	6.6	1,540	0.59 J	19	17,700	32	6.2 J	51	0.47 J	15,900
K2	4/14/2007	K2-2.0-4.0	2-4	10,200	9.1 UJ	13	1,140	0.67 J	21	23,900	29	8.5	54	0.33 J	19,800
K2	4/14/2007	K2-4.0-6.0	4-6	9,340	8.5 UJ	6.1	167	0.59 J	1.9	20,000	16	7.5	21	3.9 U	17,900
K2	4/14/2007	DUP-008	4-6	9,940	R	6.3	183	0.62 J	2.0	20,000	17	7.9	22	4.0 U	18,900
K2	4/14/2007	K2-6.0-8.0	6-8	7,670	8.9 UJ	4.8	226	0.59 J	2.1	31,300	14	7.7	18	3.7 U	25,300
K2	4/14/2007	K2-8.0-10.0	8-10	9,520	8.3 UJ	5.2	190	0.75	0.25 J	15,300	17	8.5	21	3.6 U	32,300
K2	4/14/2007	K2-10.0-12.0	10-12	5,100	6.8 UJ	2.6	66	0.36 J	0.45 J	76,000	9.8	6.5	12	3.2 U	13,100
K2	4/14/2007	K2-12.0-14.0	12-14	4,630	7.5 UJ	5.0	60	0.33 J	0.27 J	53,900	9.1	7.2	10	3.2 U	15,100
K2	4/14/2007	K2-14.0-14.8	14-14.8	2,970	7.2 UJ	25	31	0.28 J	0.31 J	60,900	6.2	5.4 J	8.3	3.2 U	9,470
K3	4/24/2007	K3-0-0.5	0-0.5	16,100	17 UJ	9.0	175	0.87 J	18 J	40,400	40	13 J	127	NA	26,000
K3	4/24/2007	K3-0.5-1.0	0.5-1	18,000	14 UJ	9.9	182	0.97 J	18 J	24,600	55	15 J	103	NA	27,800
K3	4/24/2007	K3-1.0-2.0	1-2	20,900	12 UJ	9.6	281	1.2	63 J	18,900	82	17 J	158	NA	30,000
K4	4/17/2007	K4-0-0.5	0-0.5	15,100	14 UJ	7.7	158 J	0.86 J	12	41,700	40	12 J	91	NA	25,100
K4	4/17/2007	K4-0.5-1.0	0.5-1	23,200	11 UJ	9.4	196 J	1.2	6.1	18,200	56	13 J	74	NA	32,500
K4	4/17/2007	K4-1.0-2.0	1-2	21,700	11 UJ	9.7	204 J	1.1	13	17,500	71	13 J	78	NA	30,000
K4	4/17/2007	K4-2-4	2-4	15,900	12 UJ	11	315 J	1.1	44	21,200	83	13 J	96	NA	27,500
K4	4/17/2007	K4-4-6	4-6	15,800	R	10	282 J	1.0	19	15,700	71	9.9 J	81	NA	26,500
K4	4/17/2007	K4-6-8	6-8	17,200	R	17	562	0.95	22	17,400	52	12	74	NA	28,200
K4	4/17/2007	K4-8-10	8-10	15,300	R	11	149	0.87	5.7	20,100	32	9.6	41	NA	26,900
K4	4/17/2007	K4-10-12	10-12	11,400	R	5.4	106	0.65 J	0.90	19,600	18	7.8	20	NA	20,300
K4	4/17/2007	K4-12-13.8	12-13.8	8,790	R	1.5	69	0.54 J	0.47 J	51,500	15	8.2	15	NA	20,100
K5	4/11/2007	K5-0-0.5	0-0.5	17,800	R	8.7	155	0.92 J	8.0 J	26,100	48	13 J	70	NA	27,300
K5	4/11/2007	K5-0.5-1.0	0.5-1	21,500	R	8.5	191	1.1	9.0 J	13,900	59	13 J	61	NA	30,700
K5	4/11/2007	K5-1.0-2.0	1-2	20,700	R	11	249	1.1	19 J	16,600	71	14 J	75	NA	30,600
L.5-1.5	4/12/2007	L.5-1.5-0-0.5	0-0.5	17,300	0.96 J	9.9	255	0.82 J	28	40,400	41	13 J	170	NA	27,700
L.5-1.5	4/12/2007	L.5-1.5-0.5-1.0	0.5-1	17,900	14 UJ	11	264	0.87 J	31	34,200	42	15	198	NA	29,600
L.5-1.5	4/12/2007	L.5-1.5-1.0-2.0	1-2	15,400	R	11	544 J	0.87 J	53	25,500	44	18	230	NA	26,300
L.5-2	4/12/2007	L.5-2-0.0.5	0-0.5	19,800	1.2 J	9.4	201	0.91 J	22	37,000	46	13 J	159	NA	29,400
L.5-2	4/12/2007	L.5-2-0.5-1.0	0.5-1	21,400	14 UJ	10	198	0.99 J	22	30,100	49	15	182	NA	32,000
L.5-2	4/12/2007	L.5-2-1.0-1.9	1-1.9	19,800	13 UJ	10	184	0.94 J	28	22,500	44	19	134	NA	29,500
L.5-2	4/12/2007	DUP-005	1-1.9	20,700	14 UJ	8.8	186	0.98 J	29	24,700	45	19	148	NA	30,900
L-1.5	4/10/2007	L1.5-0-0.5	0-0.5	5,220	8.6 UJ	20	902	0.68 J	54 J	32,200	20	6.7 J	82 J	NA	17,000
L-1.5	4/10/2007	L1.5-0.5-1.1	0.5-1.1	1,970	7.5 UJ	4.2	139	0.13 J	5.4 J	29,500	5.9	3.1 J	14 J	NA	6,160
L2	4/14/2007	L2-0-0.5	0-0.5	16,900	R	9.3	196 J	0.89 J	22	37,500	43	12	154	NA	27,400
L2	4/14/2007	L2-0.5-1.0	0.5-1	18,300	R	10	202 J	0.99 J	23	34,800	47	15	177	NA	29,700
L2	4/14/2007	L2-1.0-2.0	1-2	18,400	R	9.1	183 J	1.0 J	25	26,500	44	18	151	NA	29,300
L2	4/14/2007	L2-2.0-4.0	2-4	21,500	R	11	230	1.1	29	20,600	51	16	186	NA	31,000
L2	4/14/2007	L2-4.0-6.0	4-6	21,800	R	13	262	1.0	24	17,900	60	13	104	NA	29,900
L2	4/14/2007	L2-6.0-8.0	6-8	17,300	11 UJ	9.4	161	0.92 J	3.5	20,700	30	9.9	42	NA	29,700
L2	4/14/2007	L2-8.0-10.0	8-10	13,600	11 UJ	4.7	140	0.79 J	1.3	35,600	22	10	26	NA	27,500
L2	4/14/2007	L2-10.0-12.0	10-12	7,700	R	1.3	102	0.51 J	0.66	47,200	13	6.9	15	NA	19,500
L2	4/14/2007	L2-12.0-14.0	12-14	4,590	R	1.2	52	0.29 J	0.38 J	65,600	8.9	4.3 J	12	NA	9,360
L2	4/14/2007	L2-14.0-15.0	14-15	3,570	6.6 U	3.4	41	0.25 J	0.22 J	39,300	6.7	8.3	6.0	NA	9,230

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Table B-14
Sediment TAL Metals and Cyanide Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval	Aluminum (mg/kg)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Calcium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Cyanide (mg/kg)	Iron (mg/kg)
L3	4/18/2007	L3-0-0.5	0-0.5	18,000	17 UJ	9.9	194 J	0.93 J	19	42,000	46	13 J	137	0.51 U	29,100
L3	4/18/2007	L3-0.5-1.0	0.5-1	17,900	16 UJ	11	186 J	0.94 J	19	38,000	47	15 J	148	NA	29,900
L3	4/18/2007	L3-1.0-1.6	1-1.6	17,000	R	10	167 J	0.89 J	16	31,300	46	17 J	105	NA	28,200
M.5-1.5	4/16/2007	M.5-1.5-0-0.5	0-0.5	18,400	19 UJ	10	228 J	0.99 J	30	42,100	46	14 J	194	NA	29,500
M.5-1.5	4/16/2007	M.5-1.5-0.5-1.0	0.5-1	18,700	14 UJ	11	218 J	1.0 J	30	36,100	46	15	215	NA	30,600
M.5-1.5	4/16/2007	M.5-1.5-1.0-1.6	1-1.6	17,300	R	9.9	187	0.99	31	25,900	42	18	186	NA	28,600
M.5-1.5	4/16/2007	M.5-1.5-2-4	2-4	19,800	12 UJ	11	327 J	1.0	51	20,400	56	16 J	232	NA	29,600
M.5-1.5	4/16/2007	M.5-1.5-4-6	4-6	17,900	11 UJ	8.4	233 J	0.99	46	20,400	52	13 J	113	NA	28,600
M.5-1.5	4/16/2007	M.5-1.5-6-8	6-8	9,890	9.3 UJ	5.2	142	0.58 J	3.6	69,900	18	8.4	27	NA	22,600
M.5-1.5	4/16/2007	M.5-1.5-8-10	8-10	9,030	9.9 UJ	5.4	138	0.55 J	1.3	83,800	16	8.5	19	NA	26,900
M.5-1.5	4/16/2007	M.5-1.5-10-12	10-12	8,350	9.2 UJ	5.0	123	0.52 J	0.62 J	83,900	15	8.5	16	NA	21,500
M.5-1.5	4/16/2007	M.5-1.5-12-12.7	12-12.7	8,450	8.9 UJ	5.2	134	0.50 J	0.59 J	92,500	15	7.9	16	NA	22,000
M.5-2	4/10/2007	M-5-2-0-0.5	0-0.5	15,700	R	8.8	186	0.85 J	23	35,900	40	13 J	155	NA	26,400
M.5-2	4/10/2007	M-5-2-0.5-1.0	0.5-1	17,500	R	9.9	200	0.95 J	26	38,200	45	14 J	185	NA	29,100
M.5-2	4/10/2007	M-5-2-1.0-2.0	1-2	17,000	R	10	182	0.88 J	32	27,600	42	17 J	158	NA	27,900
M-1.5	4/18/2007	M1.5-0-0.5	0-0.5	18,300	19 UJ	10	235 J	0.94 J	31	43,800	47	14 J	190	0.55 U	30,000
M-1.5	4/18/2007	M1.5-0.5-1.0	0.5-1	19,000	13 UJ	11	205	0.97 J	28	29,900	46	16 J	202	NA	31,000
M-1.5	4/18/2007	M1.5-1.0-2.0	1-2	19,700	13 UJ	8.7	207 J	1.0 J	38	24,600	45	21 J	168	NA	30,700
M2	4/12/2007	M2-0-0.5	0-0.5	19,300	1.1 J	9.8	194	0.89 J	23	35,300	44	13 J	157	NA	28,500
M2	4/12/2007	M2-0.5-1.0	0.5-1	20,700	1.1 J	10	202	0.95 J	24	33,800	47	14	174	NA	30,600
M2	4/12/2007	M2-1.0-2.0	1-2	22,900	13 UJ	8.2	213	1.1 J	33	22,500	49	17	141	NA	32,000
M3	4/11/2007	M3-0-0.5	0-0.5	17,100	R	9.4	183	0.94 J	21 J	37,300	45	14 J	136	NA	28,600
M3	4/11/2007	DUP-004	0-0.5	21,800	R	9.3	244	1.2	8.2 J	13,700	62	11 J	59	NA	31,000
M3	4/11/2007	M3-0.5-1.0	0.5-1	16,900	R	13	393	0.97 J	80 J	24,100	64	13 J	96	NA	27,300
M3	4/11/2007	M3-1.0-2.0	1-2	21,300	R	9.4	242	1.1	8.8 J	14,300	66	11 J	61	NA	30,800
N.5-1	4/16/2007	N.5-1-0-0.5	0-0.5	7,650	9.3 UJ	30	1,660	0.83	206	84,900	24	11	277	NA	24,400
N.5-1	4/16/2007	N.5-1-0.5-1.0	0.5-1	7,330	R	3.2	372	0.54 J	1.1	160,000	12	4.0 J	12	NA	37,900
N.5-1	4/16/2007	N.5-1-1.0-1.4	1-1.4	6,220	R	2.5	393	0.44 J	0.58 J	194,000	9.8	3.2 J	7.5	NA	35,300
N.5-1	4/16/2007	N.5-1-2-4	2-4	5,090	13 UJ	3.1	414	0.32 J	9.7	207,000	8.9	2.6 J	17	NA	12,200
N.5-1	4/16/2007	DUP-012	2-4	4,530	13 UJ	2.9	397 J	0.29 J	9.4	200,000	8.1	2.4 J	16	NA	11,600
N.5-1	4/16/2007	N.5-1-4-6	4-6	5,700	8.3 UJ	1.1 J	100	0.37 J	0.55 J	85,300	10	4.8 J	13	NA	10,100
N.5-1	4/16/2007	N.5-1-6-8	6-8	5,640	7.0 UJ	1.4	56	0.33 J	0.22 J	48,500	10	5.6 J	12	NA	8,560
N.5-1	4/16/2007	N.5-1-8-10	8-10	6,280	10 UJ	2.7	65	0.41 J	0.38 J	57,400	12	7.8 J	15	NA	10,500
N.5-1	4/16/2007	N.5-1-10-12	10-12	10,300	12 UJ	5.3	106	0.69 J	0.37 J	33,100	18	8.6 J	19	NA	22,900
N.5-1	4/16/2007	N.5-1-12-14	12-14	10,200	14 UJ	6.4	139	0.65 J	0.53 J	73,000	18	7.8 J	21	NA	19,600
N.5-1	4/16/2007	N.5-1-14-15.9	14-15.9	10,300	9.4 UJ	4.2	113 J	0.66 J	0.60 J	56,500	18	8.7 J	20	NA	23,600

See Notes on Page 22.

Table B-14
Sediment TAL Metals and Cyanide Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval	Aluminum (mg/kg)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Calcium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Cyanide (mg/kg)	Iron (mg/kg)
N.5-1.5	4/15/2007	N.5-1.5-0-0.5	0-0.5	18,200	17 UJ	12	265	1.0 J	44	44,800	49	16	264	0.72 J	32,300
N.5-1.5	4/15/2007	N.5-1.5-0.5-1.0	0.5-1	17,600	15 UJ	11	250	0.99 J	47	37,400	46	16	288	0.60 J	31,000
N.5-1.5	4/15/2007	N.5-1.5-1.0-1.9	1-1.9	17,700	R	11	224	0.99 J	51	28,600	45	21	258	0.97 J	30,300
N.5-1.5	4/15/2007	N.5-1.5-2-4	2-4	17,100	R	9.7	272	0.95 J	74	23,200	47	19	342	1.4 J	28,100
N.5-1.5	4/15/2007	N.5-1.5-4-6	4-6	18,600	R	11	290	1.0	72	20,800	54	17	398	1.7 J	29,600
N.5-1.5	4/15/2007	N.5-1.5-6-8	6-8	14,600	11 UJ	9.4	259	0.88 J	65	33,300	45	14	130	2.1 J	26,300
N.5-1.5	4/15/2007	N.5-1.5-8-10	8-10	7,040	7.7 UJ	0.83 J	113	0.48 J	1.3	22,300	13	5.6 J	20	3.3 U	12,800
N.5-1.5	4/15/2007	N.5-1.5-10-12	10-12	7,910	9.3 UJ	1.4 J	109	0.54 J	0.51 J	34,900	15	6.8 J	19	3.9 U	14,500
N.5-1.5	4/15/2007	N.5-1.5-12-14	12-14	6,580	8.1 UJ	1.6	74	0.67 U	0.67 U	73,100	13	8.6	17	3.6 U	13,000
N.5-1.5	4/15/2007	DUP-011	12-14	6,450	8.3 UJ	2.0	73	0.69 U	0.69 U	71,400	12	8.6	17	3.5 U	12,700
N.5-1.5	4/15/2007	N.5-1.5-14-16	14-16	4,260	6.4 UJ	3.9	47	0.53 U	0.53 U	67,400	8.3	6.2	11	3.3 U	10,100
N.5-1.5	4/15/2007	N.5-1.5-16-16.4	16-16.4	2,500	6.1 UJ	3.5	27	0.51 U	0.51 U	49,100	5.5	4.1 J	6.3	3.2 U	6,870
N.5-2	4/10/2007	N-5-2-0-0.5	0-0.5	16,500	R	9.9	191	0.86 J	27	34,900	41	13 J	180	NA	26,300
N.5-2	4/10/2007	N-5-2-0.5-1.0	0.5-1	18,500	R	11	202	0.98 J	34	34,400	45	16 J	248	NA	30,000
N.5-2	4/10/2007	N-5-2-1.0-2.0	1-2	16,800	R	11	193	0.91 J	34	30,400	42	16 J	225	NA	28,700
N-1.5	4/18/2007	N1.5-0-0.5	0-0.5	9,760	R	3.8	106 J	0.59 J	7.9	11,500	20	8.7 J	52	0.51 U	18,200
N-1.5	4/18/2007	N1.5-0.5-1.0	0.5-1	18,900	15 UJ	11	234 J	1.0 J	35	37,000	47	17 J	233	NA	31,700
N-1.5	4/18/2007	N1.5-1.0-1.8	1-1.8	19,200	12 UJ	10	199 J	0.98 J	30	28,600	47	18 J	203	NA	29,400
N2	4/13/2007	N2-0-0.5	0-0.5	18,200	0.99 J	11	218 J	0.97 J	29	41,500	46	14	195	NA	29,500
N2	4/13/2007	N2-0.5-1.0	0.5-1	18,200	R	9.2	174 J	0.93	27	26,000	43	18	175	NA	28,700
N2	4/13/2007	N2-1.0-2.0	1-2	19,300	R	11	190 J	1.0 J	42	22,600	47	22	159	NA	30,400
N2	4/13/2007	N2-2.0-4.0	2-4	20,400	R	9.3	226	1.1 J	44	20,500	58	18	264	NA	30,600
N2	4/13/2007	DUP-006	2-4	19,500	R	9.0	216	1.0	42	19,400	53	17	258	NA	28,900
N2	4/13/2007	N2-4.0-6.0	4-6	18,300	R	15	330	1.0	52	17,500	56	12	108	NA	29,100
N2	4/13/2007	N2-6.0-8.0	6-8	16,800	R	14	158	0.92	12	18,000	36	10	56	NA	29,400
N2	4/13/2007	N2-8.0-10.0	8-10	15,800	R	6.1	155	0.90	2.6	20,900	26	9.8	34	NA	27,600
N2	4/13/2007	N2-10.0-12.0	10-12	11,000	R	4.0	136	0.68 J	2.2	65,500	19	9.1	22	NA	24,400
N2	4/13/2007	N2-12.0-14.0	12-14	10,600	R	2.8	133	0.68 J	0.80	60,100	18	9.3	20	NA	23,300
N2	4/13/2007	N2-14.0-14.5	14-14.5	6,230	R	8.7	149	0.42 J	0.78 J	142,000	12	7.5 J	14	NA	16,900
N3	4/18/2007	N3-0-0.5	0-0.5	9,730	11 UJ	6.1	122 J	0.51 J	12	19,400	23	8.9 J	63	0.44 J	17,800
N3	4/18/2007	N3--0.5-1.0	0.5-1	10,200	R	2.9	92 J	0.63	0.21 J	3,290	16	8.3 J	16	NA	19,800
O.5-1.5	4/15/2007	O.5-1.5-0-0.5	0-0.5	15,900	R	10	308	0.94 J	54	46,300	43	15	301	NA	28,400
O.5-1.5	4/15/2007	O.5-1.5-0.5-1.0	0.5-1	15,800	R	11	278	0.90	81	31,800	40	20	402	NA	27,200
O.5-1.5	4/15/2007	O.5-1.5-1.0-1.9	1-1.9	13,800	R	9.2	268	0.81 J	90	23,800	39	19	399	NA	23,000
O.5-1.5	4/15/2007	O.5-1.5-2-4	2-4	17,100	R	13	359	1.0 J	88	26,700	48	22	1,560	NA	28,500
O.5-1.5	4/15/2007	O.5-1.5-4-6	4-6	16,600	10 UJ	18	209	0.94	35	18,200	42	12	198	NA	28,500
O.5-1.5	4/15/2007	O.5-1.5-6-8	6-8	14,800	10 UJ	8.7	186	0.87	13	30,500	26	9.7	57	NA	26,200
O.5-1.5	4/15/2007	O.5-1.5-8-10	8-10	10,800	8.7 UJ	1.4 J	166	0.77	4.5	45,900	19	8.8	30	NA	18,300
O.5-1.5	4/15/2007	O.5-1.5-10-12	10-12	9,360	8.7 UJ	1.6	120	0.60 J	0.61 J	61,000	16	9.0	19	NA	16,400
O.5-1.5	4/15/2007	O.5-1.5-12-13.2	12-13.2	6,630	7.3 UJ	2.5	62	0.39 J	0.41 J	80,800	12	6.5	16	NA	12,600

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Table B-14
Sediment TAL Metals and Cyanide Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval	Aluminum (mg/kg)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Calcium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Cyanide (mg/kg)	Iron (mg/kg)
O.5-2	4/10/2007	O.5-2-0-0.5	0-0.5	13,100	0.98 J	8.4	200	0.73 J	33 J	36,300	37	12 J	211 J	NA	23,900
O.5-2	4/10/2007	O-5-2-0.5-1.0	0.5-1	15,400	R	10	208	0.88 J	40	35,400	41	15 J	267	NA	27,000
O.5-2	4/10/2007	O-5-2-1.0-2.0	1-2	18,300	R	9.6	248	1.0 J	65	28,000	51	22 J	361	NA	29,300
O1	4/16/2007	O1-0-0.5	0-0.5	11,200	15 UJ	113	2,870 J	0.93 J	840	28,200	22	111 J	6,030	0.58 J	74,400
O1	4/16/2007	O1-0.5-1.0	0.5-1	13,800	15 UJ	30	2,370 J	1.3	849	44,300	31	226 J	6,300	NA	75,500
O1	4/16/2007	O1-1.0-1.9	1-1.9	14,100	10 UJ	36	3,270 J	0.91	133	32,000	34	16 J	529	NA	40,200
O1.5	4/10/2007	O1.5-0-0.5	0-0.5	16,900	0.92 J	10	267	0.93 J	53 J	39,700	44	15	285 J	NA	29,100
O1.5	4/10/2007	O1.5-0.5-1.0	0.5-1	14,600	0.84 J	9.3	242	0.79 J	47 J	34,800	38	13	271 J	NA	26,000
O1.5	4/10/2007	O1.5-1.0-2.0	1-2	16,400	13 UJ	9.9	243	0.89 J	69 J	24,700	43	20	294 J	NA	28,200
O2	4/13/2007	O2-0-0.5	0-0.5	19,400	0.73 J	10	219	0.90 J	32	39,800	46	14 J	215	NA	29,400
O2	4/13/2007	O2-0.5-1.0	0.5-1	16,200	13 UJ	9.2	180	0.75 J	28	33,200	38	12	188	NA	24,700
O2	4/13/2007	O2-1.0-2.0	1-2	16,700	R	8.9	183 J	0.88 J	40	27,200	42	18	203	NA	26,900
O2	4/13/2007	O2-2.0-4.0	2-4	19,100	R	9.5	231	1.0	54	23,000	53	19	380	NA	29,000
O2	4/13/2007	O2-4.0-6.0	4-6	18,700	R	16	881	0.97	28	17,300	52	13	177	NA	28,800
O2	4/13/2007	O2-6.0-8.0	6-8	16,700	R	16	180	0.89	17	15,600	40	9.6	75	NA	27,600
O2	4/13/2007	O2-8.0-10.0	8-10	15,900	R	6.4	158	0.88	3.3	19,400	26	9.5	39	NA	27,000
O2	4/13/2007	O2-10.0-12.0	10-12	11,300	R	4.3	141	0.71 J	1.7	55,700	19	9.5	24	NA	24,200
O2	4/13/2007	O2-12.0-14.0	12-14	9,590	R	3.1	133	0.66 J	0.70 J	61,900	23	8.6	21	NA	21,400
O2	4/13/2007	O2-14-14.4	14-14.4	9,950	R	2.8	130	0.70 J	0.74 J	43,500	18	10	28	NA	17,900
P.5-1	4/16/2007	P.5-1-0-0.5	0-0.5	18,400	R	11	421	1.1	84	23,500	48	22	632	4.9 U	30,600
P.5-1	4/16/2007	P.5-1-0.5-1.0	0.5-1	19,700	R	12	266 J	0.97	49	26,300	86	15	218	NA	27,400
P.5-1	4/16/2007	P.5-1-1.0-2.0	1-2	17,700	R	18	447 J	1.0	294	25,200	86	24	376	NA	29,800
P.5-1.5	4/15/2007	P.5-1.5-0-0.5	0-0.5	12,500	R	15	713	0.80 J	65	36,800	35	21	681	0.89 J	28,300
P.5-1.5	4/15/2007	P.5-1.5-0.5-1.0	0.5-1	18,300	R	13	477	1.0	65	27,600	73	19	464	1.1 J	28,800
P.5-1.5	4/15/2007	P.5-1.5-1.0-2.0	1-2	18,600	R	12	436	0.93	76	24,200	67	14	345	1.8 J	27,600
P.5-1.5	4/15/2007	P.5-1.5-2-4	2-4	18,000	12 UJ	15	304	1.1	163	24,100	87	20	249	0.62 J	29,200
P.5-1.5	4/15/2007	P.5-1.5-4-6	4-6	16,100	8.1 UJ	12	488	0.94	76	19,700	69	12	123	4.6 U	27,000
P.5-1.5	4/15/2007	P.5-1.5-6-8	6-8	16,100	11 UJ	20	1,060	1.0	46	17,800	57	13	130	0.94 J	29,300
P.5-1.5	4/15/2007	P.5-1.5-8-10	8-10	13,600	11 UJ	19	271	0.88 J	29	21,400	39	10	70	0.57 J	27,400
P.5-1.5	4/15/2007	P.5-1.5-10-12	10-12	9,350	9.8 UJ	5.7	164	0.66 J	6.4	48,100	19	8.6	29	4.4 U	20,000
P.5-1.5	4/15/2007	P.5-1.5-12-14	12-14	9,320	8.4 UJ	1.2 J	117	0.73	1.1	49,100	16	11	22	3.7 U	16,500
P.5-1.5	4/15/2007	P.5-1.5-14-16	14-16	9,290	9.2 UJ	1.9	143	0.73 J	0.63 J	81,600	15	10	19	3.9 U	16,700
P.5-1.5	4/15/2007	P.5-1.5-16-16.7	16-16.7	7,380	R	1.7	91	0.55 J	0.41 J	55,700	13	8.3	17	3.4 U	14,200
P.5-2	4/10/2007	P-5-2-0-0.5	0-0.5	14,700	R	9.1	192	0.80 J	29	30,600	44	14 J	211	NA	25,000
P.5-2	4/10/2007	P-5-2-0.5-1.0	0.5-1	18,700	R	34	178	0.95	13	15,700	52	14 J	78	NA	26,200
P.5-2	4/10/2007	P-5-2-1.0-2.0	1-2	19,300	R	9.7	201	1.0	14	16,300	65	12 J	80	NA	28,400
P1	4/10/2007	P1-0-0.5	0-0.5	14,800	R	73	616	0.99 J	640 J	23,100	79	23	852 J	NA	36,200
P1	4/10/2007	P1-0.5-1.0	0.5-1	16,500	R	48	550	1.0 J	781	20,700	70	25 J	986	NA	37,400
P1	4/10/2007	P1-1.0-2.0	1-2	15,000	R	38	771	0.96 J	864	24,000	70	17 J	782	NA	32,700
P1	4/10/2007	DUP-002	1-2	16,000	R	39	887	1.0 J	783	25,000	73	17 J	688	NA	33,500
P-1.5	4/16/2007	P1.5-0-0.5	0-0.5	12,600	R	16	806 J	0.78 J	66	47,100	41	17	448	5.0 U	27,400
P-1.5	4/16/2007	P1.5-0.5-1.0	0.5-1	19,000	R	14	579 J	0.93	111	28,000	64	13	356	NA	29,400
P-1.5	4/16/2007	P1.5-1.0-2.0	1-2	20,700	R	12	266 J	1.0	90	22,400	84	17	280	NA	28,300
P2	4/16/2007	P2-0-0.5	0-0.5	14,000	14 UJ	9.5	241 J	0.76 J	40	42,200	40	13	247	NA	24,700
P2	4/16/2007	P2-0.5-1.0	0.5-1	20,100	12 UJ	9.7	211 J	1.1	19	26,000	93	13	129	NA	29,900

See Notes on Page 22.

Table B-14
Sediment TAL Metals and Cyanide Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval	Aluminum (mg/kg)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Calcium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Cyanide (mg/kg)	Iron (mg/kg)
P2	4/16/2007	P2-1.0-2.0	1-2	20,100	10 UJ	11	214 J	1.1	43	18,200	71	15	166	NA	29,600
P2	4/16/2007	P2-2-4	2-4	17,000	11 UJ	14	281 J	1.0	111	22,300	86	15 J	129	NA	27,000
P2	4/16/2007	P2-4-6	4-6	17,200	10 UJ	11	353 J	0.93	36	17,300	69	10 J	94	NA	27,300
P2	4/16/2007	P2-6-8	6-8	18,800	9.3 UJ	18	851 J	0.97	25	15,300	52	11 J	89	NA	28,800
P2	4/16/2007	P2-8-10	8-10	17,400	9.9 UJ	19	241 J	0.94	23	16,500	45	9.8 J	67	NA	29,300
P2	4/16/2007	P2-10-12	10-12	15,400	9.7 UJ	8.4	172 J	0.84	4.8	19,400	28	9.0 J	37	NA	26,400
P2	4/16/2007	P2-12-14	12-14	11,600	11 UJ	4.8	134 J	0.71 J	1.3	47,000	19	9.1	22	NA	24,100
P2	4/16/2007	P2-14-16	14-16	8,930	11 UJ	3.9	130 J	0.62 J	0.88	71,500	16	8.1 J	21	NA	19,400
P2	4/16/2007	P2-16-16.8	16-16.8	7,140	11 UJ	5.0	142 J	0.51 J	0.69 J	117,000	13	6.5 J	21	NA	14,100
Q.5-1.5	4/15/2007	Q5-1.5-0-0.5	0-0.5	13,300	R	11	331	0.81 J	80	45,400	36	18	521	NA	25,400
Q.5-1.5	4/15/2007	Q.5-1.5-0.5-1.0	0.5-1	15,000	10 UJ	7.1	234 J	0.88	50	24,700	60	14	209	NA	25,200
Q.5-1.5	4/15/2007	Q.5-1.5-1.0-2.0	1-2	16,900	11 UJ	13	264 J	1.0	73	22,800	77	18	344	NA	27,700
Q.5-1.5	4/15/2007	Q.5-1.5-2-4	2-4	18,300	11 UJ	16	317	1.1	150	22,700	87	18	176	NA	29,100
Q.5-1.5	4/15/2007	Q.5-1.5-4-6	4-6	19,300	11 UJ	12	448	1.0	49	19,300	73	12	125	NA	29,500
Q.5-1.5	4/15/2007	Q.5-1.5-6-8	6-8	20,300	10 UJ	14	557	1.0	46	15,100	62	15	120	NA	30,600
Q.5-1.5	4/15/2007	Q.5-1.5-8-10	8-10	18,200	11 UJ	23	642	0.95	32	17,100	53	11	89	NA	30,500
Q.5-1.5	4/15/2007	DUP-010	8-10	16,500	11 UJ	22	597	0.97	33	17,400	51	11	88	NA	29,500
Q.5-1.5	4/15/2007	Q.5-1.5-10-12	10-12	14,800	11 UJ	11	204 J	0.88 J	8.0	22,500	29	9.9	44	NA	27,100
Q.5-1.5	4/15/2007	Q.5-1.5-12-14	12-14	11,700	10 UJ	4.7	133	0.67 J	1.7	39,800	20	8.6	22	NA	23,100
Q.5-1.5	4/15/2007	Q.5-1.5-14-16	14-16	8,680	9.8 UJ	3.0	104	0.55 J	0.63 J	61,200	15	8.1 J	16	NA	21,400
Q.5-1.5	4/15/2007	Q.5-1.5-16-16.7	16-16.7	4,950	9.1 UJ	3.4	83	0.34 J	0.43 J	64,800	9.2	7.3 J	9.8	NA	10,800
Q.5-2	4/10/2007	Q.5-2-0-0.5	0-0.5	13,500	R	9.0	169	0.73 J	31	36,000	37	15 J	216	NA	23,700
Q.5-2	4/10/2007	Q.5-2-0.5-1.0	0.5-1	18,500	11 UJ	12	195	1.0	15 J	18,100	85	10	101 J	NA	28,700
Q.5-2	4/10/2007	Q.5-2-1.0-2.0	1-2	19,800	12 UJ	11	214	1.1	35 J	17,100	74	13	195 J	NA	28,700
Q1	4/10/2007	Q1-0-0.5	0-0.5	12,700	R	10	340	0.76 J	123 J	22,500	29	35	1,790 J	NA	24,600
Q1	4/10/2007	Q1-0.5-1.0	0.5-1	19,200	R	25	420	1.0	75 J	15,100	55	23	377 J	NA	36,100
Q1	4/10/2007	Q1-1.0-1.8	1-1.8	15,100	10 UJ	23	1,280	0.83 J	120 J	38,000	73	27	653 J	NA	40,600
Q1.5	4/10/2007	Q1.5-0-0.5	0-0.5	14,200	R	9.7	316	0.80 J	126 J	30,800	38	28	784 J	NA	25,500
Q1.5	4/10/2007	Q1.5-0.5-1.0	0.5-1	16,000	10 UJ	8.6	282	0.89	55 J	24,400	55	16	347 J	NA	26,300
Q1.5	4/10/2007	Q1.5-1.0-2.0	1-2	18,800	R	13	210	0.95	17 J	16,800	63	11	104 J	NA	26,500
Q1.5	4/10/2007	DUP-003	1-2	18,200	R	16	269	0.99	91 J	20,600	76	16	363 J	NA	28,100
Q2	4/24/2007	Q2-0-0.5	0-0.5	13,400	13 UJ	8.1	173	0.73 J	34 J	34,600	38	14 J	216	NA	22,800
Q2	4/24/2007	Q2-0.5-1.0	0.5-1	19,000	12 UJ	8.2	183	0.99 J	23 J	19,200	57	14 J	129	NA	27,600
Q2	4/24/2007	Q2-1.0-2.0	1-2	19,800	11 UJ	12	202	1.1	23 J	18,600	71	13 J	115	NA	31,100
R1	4/10/2007	R1-0-0.5	0-0.5	25,100	R	27	290	1.4 J	116	32,100	58	42	674	NA	38,500
R1	4/10/2007	R1-0.5-1.0	0.5-1	20,300	R	7.4	193	1.1	16	16,100	53	14	123	NA	28,600
R1	4/10/2007	R1-1.0-1.5	1-1.5	18,400	R	6.8	213	0.99	26 J	17,200	63	13	119 J	NA	26,400
R-1.5	4/18/2007	R1.5-0-0.5	0-0.5	14,400	13 UJ	11	270 J	0.77 J	60	48,700	39	16 J	386	0.73 J	25,700
R-1.5	4/18/2007	R1.5-0.5-1.0	0.5-1	18,400	9.7 UJ	10	191 J	0.95	16	21,300	60	12 J	95	NA	27,100
R-1.5	4/18/2007	R1.5--1.0-2.0	1-2	20,000	R	14	259 J	1.1	92	24,900	89	20 J	304	NA	29,500
R2	4/10/2007	R2-0-0.5	0-0.5	16,600	R	11	172	0.91 J	27	35,500	43	18	172	NA	27,500
R2	4/10/2007	R2-0.5-1.0	0.5-1	19,500	R	4.9	197	1.0	23	21,400	55	15	132	NA	29,200
R2	4/10/2007	R2-1.0-2.0	1-2	21,000	R	8.8	200	1.1	15	20,200	69	14	104	NA	30,500

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Table B-14
Sediment TAL Metals and Cyanide Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval	Aluminum (mg/kg)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Calcium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Cyanide (mg/kg)	Iron (mg/kg)
S1	4/15/2007	SI-0-0.5	0-0.5	16,400	R	9.9	219	0.96	26	24,900	50	14	138	NA	26,900
S1	4/15/2007	SI-0.5-1.0	0.5-1	17,500	R	8.8	243	1.0	34	20,600	71	14	123	NA	28,000
S1	4/15/2007	SI-1.0-1.9	1-1.9	13,700	R	7.9	238	0.93	83	15,300	46	16	111	NA	25,700
S1	4/15/2007	S1-2-4	2-4	12,100	R	5.2	168	0.80	3.8	14,000	21	11	26	NA	23,300
S1	4/15/2007	DUP-009	2-4	13,200	R	4.3	191	0.90	14	11,400	27	11	45	NA	24,500
S1	4/15/2007	S1-4.0-6.1	4-6.1	6,690	7.1 UJ	5.0	77	0.46 J	0.30 J	55,500	12	8.5	12	NA	15,600
S2	4/10/2007	S2-0-0.5	0-0.5	19,800	R	8.7	167	1.0	7.9	22,300	47	15	94	NA	30,000
S2	4/10/2007	S2-0.5-1.0	0.5-1	19,700	R	9.9	163	1.0	7.7	18,700	50	13	82	NA	30,600
S2	4/10/2007	S2-1.0-1.6	1-1.6	19,600	R	8.0	175	1.0	6.8	16,200	55	12	64	NA	29,100
T1	4/10/2007	T1-0-0.5	0-0.5	14,100	12 UJ	7.6	162	0.78 J	19 J	23,400	38	12	137 J	NA	23,400
T1	4/10/2007	T1-0.5-1.0	0.5-1	18,400	R	14	183	1.0	7.5 J	16,000	60	12	65 J	NA	28,900
T1	4/10/2007	T1-1.0-1.4	1-1.4	17,400	R	9.8	252	1.0	71 J	17,300	65	14	114 J	NA	26,900
SD-A	10/10/2007	SD-A 0-0.5	0-0.5	4,050	7.7 UJ	23 J	399	0.47 J	20	22,400	10	8.0	144 J	0.73 J	19,200
SD-A	10/10/2007	SD-F 0-0.5	0-0.5	3,860	7.7 UJ	31 J	399	0.46 J	22	30,100	9.7	7.8	158 J	1.1 J	20,300
SD-B	10/8/2007	SD-B 0-0.75	0-0.75	8,800	8.0 UJ	9.8 J	121	0.72	1.7	14,700	10	5.1 J	28 J	3.4 U	16,600
SD-C	10/8/2007	SD-C 0-0.7	0-0.7	5,510	7.9 UJ	11 J	93	0.42 J	0.65 U	25,100	9.7	1.9 J	10 J	3.3 U	17,000
SD-D	10/8/2007	SD-D 0-0.6	0-0.6	5,610	7.9 UJ	6.0 J	138	0.42 J	11	56,000	14	5.0 J	42 J	0.47 J	11,200
SD-E	10/8/2007	SD-E 0-0.5	0-0.5	2,510	7.2 UJ	15 J	189	0.36 J	113	61,200	5.7	4.6 J	59 J	0.36 J	11,100
SD-E	10/8/2007	SD-E 0.5-1	0.5-1	7,360	8.7 U	14 J	372	1.1	136	56,000	15	7.0 J	125 J	0.63 J	36,100
SD-E	10/8/2007	SD-E 1-1.8	1-1.8	3,790	8.4 UJ	13 J	527	0.45 J	46	12,100	11	4.1 J	118 J	1.2 J	11,500
Goose Lake															
GL-SDC-1	4/25/2007	GLSDC010-0.5	0-0.5	13,900	17 UJ	5.4	129	0.76 J	2.0	34,200	34	8.5 J	37	NA	23,400
GL-SDC-1	4/25/2007	GLSDC010.5-1.0	0.5-1	18,800	14 UJ	9.9	187	1.0 J	5.3	20,600	70	11 J	61	NA	29,900
GL-SDC-1	4/25/2007	GLSDC011.0-1.7	1-1.7	16,900	13 UJ	9.8	164	0.93 J	4.3	23,600	54	9.6 J	47	NA	27,800
GL-SDC-1	4/25/2007	GLSDC01-2-4	2-4	20,200	13 UJ	11	173	1.1	2.5	17,600	51	11 J	51	NA	28,900
GL-SDC-1	4/25/2007	DUP-017	2-4	20,900	12 U	10	180	1.1	2.2	16,200	61	11	52	NA	28,600
GL-SDC-1	4/25/2007	GLSDC0104-6	4-6	19,200	R	10	164	1.0	2.0	14,500	45	10	48	NA	26,800
GL-SDC-1	4/25/2007	GLSDC016-8	6-8	13,800	R	5.3	173	0.80	0.14 J	19,000	22	10	17	NA	26,100
GL-SDC-1	4/25/2007	GLSDC018-10	8-10	7,730	7.0 UJ	4.1	90	0.47 J	0.18 J	19,200	14	7.2	11	NA	20,100
GL-SDC-2	4/25/2007	GLSDC02-0-0.5	0-0.5	14,300	17 UJ	6.6	133	0.75 J	2.3	36,500	36	8.7 J	40	NA	23,800
GL-SDC-2	4/25/2007	GLSDC02-0.5-1.0	0.5-1	14,800	12 UJ	7.4	140	0.81 J	2.2	31,200	37	9.1 J	42	NA	24,500
GL-SDC-2	4/25/2007	GLSDC02-1.0-2.0	1-2	15,400	10 UJ	9.0	159	0.90	4.3	23,000	50	9.4	46	NA	25,000
GL-SDC-2	4/25/2007	GLSDC02-2-4	2-4	19,100	11 UJ	13	170	0.98	2.6	17,800	49	9.8	51	NA	28,000
GL-SDC-2	4/25/2007	GLSDC02-4-6	4-6	12,000	R	5.5	141	0.71	0.21 J	12,400	20	10	19	NA	24,300
GL-SDC-2	4/25/2007	GLSDC02-6-8	6-8	8,870	6.9 UJ	2.8	66	0.54 J	0.16 J	14,900	15	7.3	15	NA	16,700
GL-SDC-2	4/25/2007	GLSDC02-8-10	8-10	8,200	R	3.2	64	0.49 J	0.13 J	15,800	14	7.1	14	NA	16,600
GL-SDC-2	4/25/2007	GLSDC0210-103	10-10.3	7,130	7.1 UJ	1.9	56	0.45 J	0.12 J	15,800	13	5.9 J	13	NA	12,600

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Table B-14
Sediment TAL Metals and Cyanide Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval	Aluminum (mg/kg)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Calcium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Cyanide (mg/kg)	Iron (mg/kg)
GL-SDC-3	4/25/2007	GLSDC03-0-0.5	0-0.5	18,700	13 UJ	6.6	152 J	0.90 J	2.4	38,400	42	9.3 J	43	5.5 U	26,500
GL-SDC-3	4/25/2007	GLSDC03-0.5-1.0	0.5-1	22,000	12 UJ	9.9	186 J	1.1	4.5	25,700	64	11 J	57	5.1 U	30,200
GL-SDC-3	4/25/2007	GLSDC03-1.0-2.0	1-2	18,700	R	11	168 J	0.95 J	4.8	22,100	60	10 J	51	5.1 U	26,700
GL-SDC-3	4/25/2007	GLSDC-03-2-4	2-4	21,200	12 UJ	9.8	186 J	1.1	3.4	19,500	55	11 J	53	4.8 U	29,000
GL-SDC-3	4/25/2007	DUP-018	2-4	21,700	R	11	186 J	1.1	3.5	19,700	57	11 J	54	5.0 U	29,400
GL-SDC-3	4/25/2007	GLSDC-03-4-6	4-6	9,680	7.9 UJ	2.4	71 J	0.53 J	0.46 J	52,200	16	7.7 J	17	3.3 U	14,500
GL-SDC-3	4/25/2007	GLSDC-03-6-8	6-8	10,300	R	3.6	71 J	0.60 J	0.60 J	73,000	19	8.8 J	22	3.7 U	18,800
GL-SDC-3	4/25/2007	GLSDC-03-8-10	8-10	11,900	9.7 UJ	4.4	87 J	0.66 J	0.62 J	76,500	20	11 J	22	4.1 U	22,600
GL-SDC-3	4/25/2007	GLSDC-031011.6	10-11.6	12,200	11 UJ	4.5	101 J	0.72 J	0.69 J	67,300	21	11 J	22	4.6 U	22,600
GL-SDD-1	4/25/2007	GLSDD01-0-0.5	0-0.5	14,000	15 UJ	6.6	138	0.79 J	2.0	38,400	34	9.1 J	40	NA	23,700
GL-SDD-1	4/25/2007	GLSDD01-0.5-1.0	0.5-1	15,000	11 UJ	7.8	155	0.85 J	3.9	25,700	53	9.4 J	50	NA	24,200
GL-SDD-1	4/25/2007	GLSDD01-1.0-1.8	1-1.8	15,800	12 UJ	9.4	169	0.95 J	5.1	23,000	60	10 J	53	NA	27,200
GL-SDD-1	4/25/2007	DUP-016	1-1.8	16,600	11 UJ	9.7	172	0.96	4.8	23,200	60	10	53	NA	26,600
GL-SDD-2	4/25/2007	GLSDD020-0.5	0-0.5	17,200	1.8 J	7.3	158	0.96 J	2.5	34,300	43	10 J	47	NA	27,700
GL-SDD-2	4/25/2007	GLSDD020.5-1.0	0.5-1	18,100	13 UJ	8.5	173	0.97 J	3.1	28,500	51	10 J	53	NA	27,500
GL-SDD-2	4/25/2007	GLSDD021.0-1.6	1-1.6	18,800	1.4 J	11	194	1.1	6.1	24,800	75	11	64	NA	29,700
GL-SDG-1	4/25/2007	GLSDG010-0.5	0-0.5	18,300	R	6.7	148	0.88	1.4	31,200	34	9.2	34	NA	25,900
GL-SDG-1	4/25/2007	GLSDG010.5-1.0	0.5-1	18,800	9.3 UJ	7.9	165	0.90	1.7	17,700	38	8.8	35	NA	25,600
GL-SDG-1	4/25/2007	GLSDG011.0-2.0	1-2	21,900	R	10	180	1.1	2.0	21,900	42	9.8	38	NA	29,600
GL-SDG-2	4/25/2007	GLSDG02-0-0.5	0-0.5	20,000	0.86 J	6.6	163	1.0 J	2.4	42,600	44	10 J	46	NA	28,600
GL-SDG-2	4/25/2007	GLSDG020.5-1.0	0.5-1	21,800	12 UJ	9.1	180	1.1	3.6	24,800	59	10	53	NA	29,400
GL-SDG-2	4/25/2007	GLSDG021.0-2.0	1-2	21,300	R	11	185	1.1	6.2	25,900	74	11	62	NA	30,200
GL-SDT-1	4/25/2007	GLSDT-01-0-0.5	0-0.5	19,200	14 UJ	6.6	155 J	0.93 J	2.1	40,200	41	9.8 J	41	6.0 U	27,500
GL-SDT-1	4/25/2007	GLSDT010.5-1.0	0.5-1	17,600	12 UJ	8.2	165	0.96 J	2.2	32,600	41	10	45	NA	27,700
GL-SDT-1	4/25/2007	GLSDT011.0-1.8	1-1.8	17,800	12 UJ	9.4	175	1.0	3.9	23,700	55	10	50	NA	27,900
GL-SDT-2	4/25/2007	GLSDT-02-0-0.5	0-0.5	14,400	13 UJ	5.7	121 J	0.71 J	1.8	34,100	33	7.8 J	34	5.5 U	21,500
GL-SDT-2	4/25/2007	GLSDT02-0.5-1.0	0.5-1	17,100	10 UJ	8.1	166	0.94	3.0	22,200	48	9.5	47	NA	26,000
GL-SDT-2	4/25/2007	GLSDT02-1.0-1.9	1-1.9	17,700	11 UJ	10	178	1.0	4.4	25,300	57	10	51	NA	27,700
GL-SDT-3	4/25/2007	GLSDT-03-0-0.5	0-0.5	17,000	12 UJ	6.5	143 J	0.83 J	2.2	35,100	39	9.0 J	41	5.4 U	25,200
GL-SDT-3	4/25/2007	GLSDT03-0.5-1.0	0.5-1	18,200	13 UJ	9.5	185	1.0 J	5.7	22,000	73	11	64	NA	28,500
GL-SDT-3	4/25/2007	GLSDT031.0-1.7	1-1.7	16,900	12 UJ	9.5	171	0.98 J	5.0	23,800	58	9.6 J	52	NA	27,000
GL-SDT-4	4/25/2007	GLSDT-04-0-0.5	0-0.5	12,200	11 UJ	4.9	105 J	0.63 J	2.0	30,800	32	7.0 J	35	4.9 U	19,200
GL-SDT-4	4/25/2007	GLSDT04-0.5-1.0	0.5-1	15,000	11 UJ	8.6	154	0.87 J	4.5	21,600	53	8.5 J	47	NA	24,100
GL-SDT-4	4/25/2007	GLSDT041.0-1.9	1-1.9	14,900	11 UJ	9.5	164	0.90 J	6.8	22,300	70	9.3	62	NA	25,500
GL-SDT-5	4/25/2007	GLSDT-05-0-0.5	0-0.5	18,800	14 UJ	5.3	151 J	0.92 J	2.0	39,300	41	9.7 J	41	6.3 U	27,100
GL-SDT-5	4/25/2007	GLSDT05-0.5-1.0	0.5-1	18,200	13 UJ	9.5	173	1.0 J	3.9	21,500	59	11 J	51	NA	27,500
GL-SDT-5	4/25/2007	GLSDT05-1.0-2.0	1-2	17,700	13 UJ	9.9	171	1.0 J	4.3	27,100	54	10 J	48	NA	27,700

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Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval	Lead (mg/kg)	Magnesium (mg/kg)	Manganese (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Potassium (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Sodium (mg/kg)	Thallium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
DePue Lake															
C5	4/6/2007	C5-0-0.5	0-0.5	59	8,740	543	0.27 U	41	2,320 J	6.8 U	0.74 J	971 U	4.9 U	31	1,330
C5	4/6/2007	C5-0.5-1.0	0.5-1	94	9,330	628	0.44	52	2,430 J	6.7 U	1.2 J	958 U	4.8 U	33	1,650
C5	4/6/2007	C5-1.0-2.0	1-2	63	8,080	317	0.32	34	2,190 J	6.1 U	0.54 J	867 U	4.3 U	32	671
C6	4/6/2007	C6-0-0.5	0-0.5	59	8,950	624	0.24	43	2,100 J	5.2 U	0.81 J	747 U	3.7 U	32	795
C6	4/6/2007	C6-0.5-1.0	0.5-1	40	9,070	541	0.18 U	29	1,970 J	5.9 U	0.60 J	844 U	4.2 U	24	788
C6	4/6/2007	C6-1.0-1.5	1-1.5	100	10,000	609	0.46	70	2,190 J	5.3 U	1.7	763 U	3.8 U	29	1,440
D5	4/18/2007	D5-0-0.5	0-0.5	56 J	11,500	636	0.27	39 J	2,820 J	0.68 J	0.79 J	1,130 U	5.7 U	33 J	1,340 J
D5	4/18/2007	D5-0.5-1.0	0.5-1	85 J	9,030	606	0.50	53 J	2,330 J	0.58 J	1.4 J	893 U	0.76 J	32 J	1,350 J
D5	4/18/2007	D5-1.0-1.7	1-1.7	99 J	9,980	531	0.54	41 J	2,550 J	1.0 J	1.3 J	909 U	1.2 J	36 J	940 J
D6	4/14/2007	D6-0-0.5	0-0.5	75 J	8,670	646	0.29	46	2,050 J	0.65 J	1.1 J	741 U	0.62 J	34 J	909 J
D6	4/14/2007	D6-0.5-1.0	0.5-1	38 J	6,080	269	0.27	29	1,580 J	0.50 J	1.5 U	726 U	3.6 U	29 J	280 J
D6	4/14/2007	D6-1.0-1.5	1-1.5	21 J	5,080	258	0.092 J	29	1,500 J	0.72 J	1.3 U	671 U	0.51 J	29 J	161 J
D6	4/14/2007	D6-2.0-4.0	2-4	13	18,700	442	0.088 J	16	918 J	4.0 U	0.089 J	181 J	1.3 J	18	89
D6	4/14/2007	D6-4.0-6.0	4-6	12	20,200	614	0.050 J	18	941 J	4.0 U	0.10 J	184 J	0.76 J	20	74
D6	4/14/2007	D6-6.0-8.0	6-8	11	21,800	382	0.051 J	17	1,230 J	3.3 U	0.050 J	475 U	1.2 J	17	57
D6	4/14/2007	DUP-007	6-8	11	22,000	374	0.11 U	17	1,200 J	3.7 U	1.1 U	528 U	1.2 J	17	61
D6	4/14/2007	D6-8.0-10.0	8-10	8.6	19,900	352	0.057 J	14	1,020 J	3.7 U	1.1 U	527 U	0.87 J	14	43
D6	4/14/2007	D6-10.0-12.0	10-12	8.2	20,500	360	0.14 U	15	994 J	4.5 U	1.3 U	639 U	0.48 J	14	41
D6	4/14/2007	D6-12.0-14.0	12-14	10	20,000	433	0.059 J	19	1,140 J	4.3 U	1.2 U	612 U	1.1 J	19	44
D6	4/14/2007	D6-14.0-16.0	14-16	8.3	18,800	405	0.14 U	15	1,030 J	4.7 U	1.4 U	174 J	1.0 J	14	46
D6	4/14/2007	D6-16.0-16.5	16-16.5	10	19,400	558	0.14 U	18	1,120 J	4.9 U	1.4 U	184 J	1.0 J	15	52
D7	4/17/2007	D7-0-0.5	0-0.5	43 J	12,300	624	0.25	28	1,960 J	0.59 J	0.94 J	1,150 U	0.96 J	24 J	619 J
D7	4/17/2007	D7-0.5-1.0	0.5-1	66 J	9,990	602	0.26	45	1,960 J	6.2 U	1.1 J	886 U	0.91 J	29 J	880 J
D7	4/17/2007	D7-1.0-1.8	1-1.8	91 J	9,420	657	0.49	45	1,840 J	0.83 J	1.5 J	943 U	1.0 J	30 J	966 J
D8	4/11/2007	D8-0-0.5	0-0.5	41 J	12,500 J	553	0.14 J	28	2,480	0.36 J	0.68 J	825 U	4.1 U	27	497 J
D8	4/11/2007	D8-0.5-1.0	0.5-1	43 J	11,800 J	557	0.14 J	32	2,610	0.55 J	0.72 J	834 U	4.2 U	31	557 J
D8	4/11/2007	D8-1.0-1.6	1-1.6	66 J	10,400 J	615	0.23	45	2,570	0.30 J	0.97 J	843 U	4.2 U	34	806 J
D9	4/17/2007	D9-0-0.5	0-0.5	17 J	14,400	588	0.099 J	12	475 J	4.8 U	0.24 J	680 U	3.4 U	8.5 J	178 J
D9	4/17/2007	D9-0.5-1.0	0.5-1	45 J	11,600	557	0.20	34	1,270 J	5.0 U	0.63 J	714 U	0.84 J	21 J	486 J
D9	4/17/2007	D9-1.0-1.65	1-1.65	59 J	11,700	661	0.34	41	1,430 J	5.9 U	1.0 J	846 U	0.90 J	23 J	824 J
E4	4/6/2007	E4-0-0.5	0-0.5	77	9,050	721	0.36 U	45	2,210 J	8.5 U	0.90 J	1,220 U	6.1 U	37	2,300
E4	4/6/2007	E4-0.5-1.0	0.5-1	75	8,720	395	0.43	38	1,720 J	7.2 U	0.54 J	1,030 U	5.2 U	32	1,070
E4	4/6/2007	E4-1.0-2.0	1-2	53	7,960	318	0.18 J	31	1,900	0.84 J	0.43 J	328 J	5.9 U	30	609

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Table B-14
Sediment TAL Metals and Cyanide Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval	Lead (mg/kg)	Magnesium (mg/kg)	Manganese (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Potassium (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Sodium (mg/kg)	Thallium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
E5	4/6/2007	E5-0-0.5	0-0.5	43	9,290	587	0.22 U	34	2,340 J	7.0 U	0.63 J	1,000 U	5.0 U	30	992
E5	4/6/2007	E5-0.5-1.0	0.5-1	47	9,640	493	0.40	36	2,290 J	5.5 U	0.70 J	791 U	4.0 U	31	940
E5	4/6/2007	E5-1.0-1.9	1-1.9	80	8,740	500	0.35	47	2,240 J	5.3 U	1.2 J	755 U	3.8 U	33	1,110
E6	4/6/2007	E6-0-0.5	0-0.5	43	10,800	651	0.23	32	2,350 J	5.7 U	0.75 J	814 U	4.1 U	26	1,020
E6	4/6/2007	E6-0.5-1.0	0.5-1	52	9,860	582	0.25	40	2,260 J	5.7 U	0.73 J	814 U	4.1 U	30	765
E6	4/6/2007	E6-1.0-1.6	1-1.6	72	9,140	631	0.37	48	2,150 J	5.9 U	1.2 J	848 U	4.2 U	30	1,090
E7	4/17/2007	E7-0-0.5	0-0.5	41 J	11,500	524 J	0.25	28	2,400	5.9 U	0.79 J	840 U	0.75 J	27 J	791 J
E7	4/17/2007	E7-0.5-1.0	0.5-1	55	10,600	542 J	0.25	38	2,460	6.2 U	0.97 J	888 U	0.92 J	31 J	808 J
E7	4/17/2007	E7-1.0-2.0	1-2	89 J	9,650	766 J	0.60	52	2,340	0.83 J	1.7 J	858 U	1.0 J	31 J	1,420 J
E7	4/17/2007	DUP-013	1-2	90 J	9,560	764 J	0.37	53	2,390	6.4 U	1.8 J	917 U	0.79 J	31 J	1,610 J
E7	4/17/2007	E7-2-4	2-4	31	6,340	556	0.13 J	32 J	1,480 J	0.33 J	0.28 J	789 U	3.9 U	27	370 J
E7	4/17/2007	E7-4-6	4-6	10	14,400	449	0.13 U	18 J	855 J	4.5 U	1.3 U	639 U	0.96 J	19	62 J
E7	4/17/2007	DUP-015	4-6	9.9	15,000	363	0.13 U	15 J	762 J	4.2 U	1.2 U	600 U	0.39 J	17	60 J
E7	4/17/2007	E7-6-8	6-8	7.7	21,100	471	0.12 U	14 J	646 J	4.3 U	1.2 U	609 U	0.56 J	14	34 J
E7	4/17/2007	E7-8-10	8-10	2.3	16,500	79	0.12 U	3.6 J	129 J	3.9 U	1.1 U	551 U	2.8 U	7.4	15 J
E7	4/17/2007	E7-10-12.2	10-12.2	2.7	8,200	49	0.11 U	4.1 J	98 J	3.7 U	1.1 U	535 U	2.7 U	6.6	16 J
E8	4/11/2007	E8-0-0.5	0-0.5	40 J	14,900 J	572	0.16 J	26	2,110	0.41 J	0.73 J	874 U	4.4 U	24	355 J
E8	4/11/2007	E8-0.5-1.0	0.5-1	39 J	13,900 J	612	0.15 J	27	2,200	0.41 J	0.62 J	797 U	4.0 U	26	463 J
E8	4/11/2007	E8-1.0-2.0	1-2	49 J	11,800 J	617	0.20	37	2,220	0.41 J	0.71 J	858 U	4.3 U	30	809 J
E9	4/11/2007	E9-0-0.5	0-0.5	35	15,900	631	0.19	20	1,640 J	0.51 J	0.63 J	217 J	0.64 J	19	295
E9	4/11/2007	E9-0.5-1.0	0.5-1	35	16,100	628	0.20	20	1,660 J	5.6 U	0.61 J	218 J	0.87 J	20	329
E9	4/11/2007	E9-1.0-1.9	1-1.9	47	12,300	637	0.21	33	2,520 J	5.9 U	0.87 J	212 J	0.74 J	32	820
F4	4/14/2007	F4-0-0.5	0-0.5	55 J	9,620	686	0.27 J	36	2,500 J	7.8 U	0.81 J	1,120 U	0.91 J	30 J	1,400 J
F4	4/14/2007	F4-0.5-1.0	0.5-1	103 J	9,040	754	0.35	55	2,220 J	0.51 J	1.6 J	793 U	1.2 J	31 J	1,590 J
F4	4/14/2007	F4-1.0-1.5	1-1.5	106 J	8,700	502	0.65	37	2,400 J	0.52 J	1.2 J	907 U	1.7 J	35 J	1,170 J
F4	4/14/2007	F4-2.0-4.0	2-4	11	12,500	288	0.12 U	15	808 J	4.6 U	0.081 J	656 U	1.2 J	17	69
F4	4/14/2007	F4-4.0-6.0	4-6	7.1	17,000	236	0.053 J	10	677 J	4.0 U	0.062 J	571 U	0.38 J	12	46
F4	4/14/2007	F4-6.0-8.0	6-8	9.5	21,700	465	0.14 U	15	988 J	4.4 U	0.12 J	170 J	1.1 J	15	60
F4	4/14/2007	F4-8.0-10.0	8-10	13	16,600	2,150	0.13 U	26	1,310 J	4.6 U	0.21 J	178 J	2.3 J	22	77
F4	4/14/2007	F4-10.0-12.0	10-12	12	18,400	986	0.12 U	23	1,280 J	4.6 U	0.098 J	149 J	0.93 J	21	67 J
F4	4/14/2007	F4-12.0-13.0	12-13	12 J	19,500	1,230	0.14 U	25	944 J	4.4 U	0.095 J	631 U	1.6 J	19 J	68 J
F6	4/6/2007	F6-0-0.5	0-0.5	45	11,500	547	0.18 U	30	2,110 J	6.3 U	0.80 J	898 U	4.5 U	24	868
F6	4/6/2007	F6-0.5-1.0	0.5-1	53	9,300	557	0.26	39	2,140 J	5.7 U	0.83 J	811 U	4.1 U	28	876
F6	4/6/2007	F6-1.0-2.0	1-2	89	9,050	625	0.43	46	2,250 J	6.3 U	1.2 J	899 U	4.5 U	31	1,140
F7	4/17/2007	F7-0-0.5	0-0.5	43 J	13,600	562	0.25	26	1,670 J	7.2 U	0.89 J	1,030 U	0.58 J	20 J	665 J
F7	4/17/2007	F7-0.5-1.0	0.5-1	50 J	10,300	634	0.20	36	1,690 J	6.3 U	0.96 J	894 U	4.5 U	25 J	1,040 J
F7	4/17/2007	F7-1.0-1.9	1-1.9	87 J	9,110	821	0.39	50	1,700 J	6.5 U	1.6 J	929 U	1.1 J	27 J	1,610 J

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Human Health Risk Assessment
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DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval	Lead (mg/kg)	Magnesium (mg/kg)	Manganese (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Potassium (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Sodium (mg/kg)	Thallium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
F8	4/17/2007	F8-0-0.5	0-0.5	43 J	14,700	649	0.21 J	27	1,580 J	7.2 U	0.84 J	1,020 U	1.2 J	21 J	540 J
F8	4/17/2007	F8-0.5-1.0	0.5-1	44 J	13,600	705	0.17 J	28	1,640 J	6.6 U	0.82 J	950 U	1.1 J	23 J	850 J
F8	4/17/2007	F8-1.0-2.0	1-2	54 J	10,200	686	0.23	40	1,960 J	6.5 U	0.92 J	923 U	0.97 J	29 J	1,300 J
F8	4/17/2007	F8-2-4	2-4	72 J	9,680	711 J	0.24	50	2,920	6.5 U	1.2 J	926 U	4.6 U	37 J	1,570 J
F8	4/17/2007	F8-4-6	4-6	116 J	9,690	698 J	0.49	58	2,710	0.48 J	2.0	969 U	0.83 J	33 J	1,490 J
F8	4/17/2007	F8-6-8	6-8	107 J	9,100	593	0.58	41	2,060 J	6.5 U	1.3 J	929 U	1.1 J	32 J	840 J
F8	4/17/2007	DUP-014	6-8	100 J	8,320	549	0.58	38	1,920 J	5.2 U	1.2 J	747 U	1.3 J	29 J	786 J
F8	4/17/2007	F8-8-10	8-10	99 J	7,470	511 J	0.70	32	2,500	0.48 J	1.0 J	819 U	4.1 U	31 J	1,040 J
F8	4/17/2007	F8-10-12	10-12	162 J	8,730	636	1.1	32	1,870 J	0.67 J	1.2 J	909 U	1.2 J	29 J	988 J
F8	4/17/2007	F8-12-14	12-14	34 J	8,910	605	0.22	28	1,750 J	5.2 U	0.23 J	736 U	1.2 J	27 J	277 J
F8	4/17/2007	F8-14-14.8	14-14.8	17 J	11,400	500	0.095 J	24	1,390 J	5.9 U	1.7 U	839 U	1.4 J	21 J	101 J
F9	4/11/2007	F9-0-0.5	0-0.5	46 J	13,200 J	835	0.22	29	2,400	0.86 J	0.76 J	990 U	5.0 U	27	905 J
F9	4/11/2007	F9-0.5-1.0	0.5-1	45 J	13,300 J	733	0.20	28	2,270	0.45 J	0.70 J	945 U	4.7 U	26	805 J
F9	4/11/2007	F9-1.0-2.0	1-2	71 J	9,190 J	648	0.26	49	2,910	1.1 J	1.0 J	963 U	4.8 U	40	1,220 J
G6	4/6/2007	G6-0-0.5	0-0.5	42	11,800	576	0.24 U	28	2,100 J	6.3 U	0.73 J	899 U	4.5 U	24	764
G6	4/6/2007	G6-0.5-1.0	0.5-1	64	13,100	764	0.25 U	46	2,900 J	7.5 U	1.0 J	1,080 U	5.4 U	36	1,370
G6	4/6/2007	G6-1.0-1.5	1-1.5	87	9,350	843	0.44	51	2,290 J	6.0 U	1.4 J	852 U	4.3 U	32	1,540
G7	4/10/2007	G7-0-0.5	0-0.5	52	12,000	813	0.29	30	2,070	0.97 J	0.50 J	286 J	5.5 U	26	1,610
G7	4/10/2007	G7-0.5-1.0	0.5-1	34	9,990	755	0.15	29	1,380	0.53 J	0.13 J	739 U	3.7 U	24	1,320
G7	4/10/2007	G7-1.0-1.3	1-1.3	12	10,500	498	0.062 J	24	1,270	0.52 J	1.3 U	664 U	3.3 U	24	98
G8	4/24/2007	G8-0-0.5	0-0.5	58	7,990	571	0.25 U	22	1,750 J	0.71 J	0.75 J	1,220 U	6.1 U	19	1,740
G8	4/24/2007	G8-0.5-1.0	0.5-1	46	11,100	759	0.22 U	32	2,340 J	7.6 U	0.87 J	1,090 U	5.4 U	28	1,880
G8	4/24/2007	G8-1.0-1.9	1-1.9	54	10,200	749	0.24 U	40	2,270 J	7.4 U	0.93 J	1,060 U	5.3 U	31	1,490
G9	4/10/2007	G9-0-0.5	0-0.5	47	11,400	879	0.17 J	32	2,490 J	5.4 U	0.83 J	244 J	3.9 U	29	613
G9	4/10/2007	G9-0.5-1.0	0.5-1	52	10,000	609	0.28 J	38	2,330 J	5.5 U	0.87 J	225 J	3.9 U	32	543
G9	4/10/2007	G9-1.0-1.5	1-1.5	63	8,800	610	0.20 J	44	2,320 J	5.9 U	1.0 J	233 J	4.2 U	35	728
H3	4/6/2007	H3-0-0.5	0-0.5	54	10,600	646	0.21 J	35	2,920	1.4 J	0.59 J	392 J	6.7 U	36	2,030
H3	4/6/2007	H3-0.5-1.0	0.5-1	67	8,690	541	0.24	45	2,760	6.6 U	0.87 J	259 J	4.7 U	38	1,580
H3	4/6/2007	H3-1.0-2.0	1-2	100	9,680	545	0.38	44	2,960	1.0 J	1.1 J	230 J	4.3 U	38	1,460
H6	4/10/2007	H6-0-0.6	0-0.6	22	5,990	598	0.13 J	25	1,310	0.46 J	0.056 J	700 U	3.5 U	24	504
H7	4/17/2007	H7-0-0.5	0-0.5	63 J	12,500	835	0.18 J	33	2,350 J	9.1 U	1.0 J	1,300 U	0.81 J	28 J	1,470 J
H7	4/17/2007	H7-0.5-1.0	0.5-1	48 J	11,100	775	0.19 J	32	2,080 J	0.52 J	0.76 J	1,090 U	0.79 J	28 J	2,040 J
H7	4/17/2007	H7-1.0-1.9	1-1.9	57 J	9,760	780	0.21 J	41	2,320 J	7.3 U	0.89 J	1,050 U	1.3 J	33 J	2,610 J
H7	4/17/2007	H7-2-4	2-4	70 J	8,790	661	0.25	47	2,160 J	0.77 J	1.1 J	1,040 U	1.1 J	33 J	1,940 J
H7	4/17/2007	H7-4-6	4-6	131 J	8,930	800	0.47	58	2,190 J	0.84 J	2.0 J	1,040 U	0.71 J	32 J	3,680 J
H7	4/17/2007	H7-6-8	6-8	120 J	8,300	604	0.59	45	2,090 J	0.72 J	1.5 J	976 U	1.6 J	33 J	1,220 J
H7	4/17/2007	H7-8-10	8-10	128 J	8,000	583	0.57	38	2,190 J	0.61 J	1.1 J	904 U	1.6 J	33 J	1,480 J
H7	4/17/2007	H7-10-12	10-12	130	7,930 J	626	0.94	34	2,080 J	0.46 J	1.1 J	904 U	1.4 J	32	1,430 J
H7	4/17/2007	H7-12-14	12-14	147 J	9,240	719	1.0	31	1,970 J	5.6 U	0.80 J	798 U	1.5 J	30	699 J
H7	4/17/2007	H7-14-15.4	14-15.4	29 J	8,970	627	0.20	30	2,010 J	0.44 J	0.12 J	886 U	1.1 J	30	230 J

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New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval	Lead (mg/kg)	Magnesium (mg/kg)	Manganese (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Potassium (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Sodium (mg/kg)	Thallium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
H8	4/10/2007	H8-0-0.5	0-0.5	52	10,500	808	0.42 J	40	2,250 J	6.5 U	0.82 J	255 J	4.6 U	32	939
H8	4/10/2007	H8-0.5-1.0	0.5-1	33	6,090	704	0.063 J	33	1,460 J	5.3 U	0.36 J	192 J	3.8 U	27	629
H8	4/10/2007	H8-1.0-1.3	1-1.3	14 J	4,170 J	555	0.13 U	30	1,230	4.6 U	1.3 U	657 U	3.3 U	29	88 J
I5	4/11/2007	I5-0-0.5	0-0.5	76	11,300	818	0.18 J	33	3,190 J	10 U	0.98 J	402 J	1.9 J	35	2,190
I5	4/11/2007	I5-0.5-1.0	0.5-1	66	11,200	870	0.18 J	36	3,300 J	8.3 U	0.91 J	382 J	0.95 J	39	3,380
I5	4/11/2007	I5-1.0-2.0	1-2	64	9,970	768	0.19 J	44	3,200 J	8.0 U	0.88 J	304 J	5.7 U	42	3,520
I6	4/24/2007	I6-0-0.5	0-0.5	68	11,300	805	0.25 U	33	2,680 J	0.62 J	0.96 J	1,410 U	7.0 U	29	1,970
I6	4/24/2007	I6-0.5-1.0	0.5-1	66	11,200	902	0.26 U	32	2,710 J	0.54 J	0.99 J	1,160 U	5.8 U	30	2,050
I6	4/24/2007	I6-1.0-2.0	1-2	68	9,010	676	0.20 U	46	2,700 J	7.1 U	1.0 J	1,010 U	5.1 U	37	2,400
I7	4/10/2007	I7-0-0.5	0-0.5	46	10,500	664	0.22	36	3,080	0.78 J	0.62 J	323 J	5.5 U	36	2,050
I7	4/10/2007	I7-0.5-1.0	0.5-1	53	10,400	638	0.22	39	2,760	0.71 J	0.77 J	251 J	4.9 U	36	1,500
I7	4/10/2007	I7-1.0-2.0	1-2	59	9,590	620	0.25	44	2,840	0.85 J	0.81 J	245 J	4.8 U	38	1,410
I7	4/10/2007	DUP-001	1-2	59	9,560	671	0.25	43	2,820	0.62 J	0.80 J	231 J	4.7 U	38	1,560
J3	4/17/2007	J3-0-0.5	0-0.5	25 J	23,600	309	0.12 U	4.6 U	161 J	4.1 U	0.17 J	580 U	0.36 J	5.4 J	306 J
J3	4/17/2007	J3-0.5-1.0	0.5-1	72 J	9,460	409 J	0.16	13	967	4.4 U	0.34 J	635 U	3.2 U	18 J	1,160 J
J3	4/17/2007	J3-1.0-1.9	1-1.9	63 J	9,930	309 J	0.11 J	12	728	4.2 U	0.37 J	598 U	3.0 U	14 J	930 J
J3	4/17/2007	J3-2-4	2-4	14 J	18,200	701	0.12 U	16	622 J	4.3 U	0.085 J	620 U	1.2 J	15 J	105 J
J3	4/17/2007	J3-4-6	4-6	9.2 J	21,600	717	0.097 U	13	525 J	3.8 U	0.057 J	547 U	1.2 J	12 J	55 J
J3	4/17/2007	J3-6-8	6-8	12 J	6,230	364	0.059 J	23	758 J	3.7 U	1.0 U	523 U	0.86 J	21 J	68 J
J3	4/17/2007	J3-8-10	8-10	12 J	19,500	358	0.058 J	23	921 J	4.2 U	1.2 U	597 U	1.5 J	18 J	66 J
J3	4/17/2007	J3-10-12	10-12	11 J	18,800	833	0.13 U	22	884 J	3.9 U	1.1 U	552 U	2.6 J	18 J	64 J
J3	4/17/2007	J3-12-12.6	12-12.6	11 J	20,100	461	0.12 U	21	890 J	4.2 U	1.2 U	604 U	1.6 J	17 J	60 J
J4	4/24/2007	J4-0-0.5	0-0.5	72	14,100	916	0.27 U	51	3,180 J	9.7 U	1.1 J	1,380 U	6.9 U	42	1,790
J4	4/24/2007	J4-0.5-1.0	0.5-1	65	10,400	832	0.24 U	37	2,730 J	0.61 J	0.91 J	1,100 U	5.5 U	33	4,620
J4	4/24/2007	J4-1.0-1.5	1-1.5	58	9,120	655	0.23 U	42	2,560 J	7.5 U	0.78 J	1,070 U	5.4 U	34	3,590
J5	4/17/2007	J5-0-0.5	0-0.5	67 J	11,400	831 J	0.34	32	3,040	0.74 J	0.90 J	1,210 U	6.0 U	31 J	2,270 J
J5	4/17/2007	J5-0.5-1.0	0.5-1	52 J	8,640	535 J	0.15 J	41	2,910	0.48 J	0.83 J	839 U	0.64 J	38 J	1,020 J
J5	4/17/2007	J5-1.0-1.9	1-1.9	76 J	8,670	659 J	0.30	46	2,870	0.62 J	1.4 J	957 U	0.76 J	41 J	1,340 J
J5	4/17/2007	J5-2-4	2-4	107 J	8,410	690 J	0.42	48	2,490	0.78 J	1.8	884 U	4.4 U	34 J	2,430 J
J5	4/17/2007	J5-4-6	4-6	112 J	8,040	503 J	0.59	38	2,710	1.1 J	1.6 J	926 U	0.69 J	37 J	899 J
J5	4/17/2007	J5-6-8	6-8	117 J	8,390	560 J	0.80	35	2,910	6.2 U	1.1 J	890 U	4.5 U	38 J	1,290 J
J5	4/17/2007	J5-8-10	8-10	138 J	9,470	612 J	0.95	31	2,580	5.7 U	0.79 J	819 U	0.92 J	33 J	785 J
J5	4/17/2007	J5-10-11.9	10-11.9	28 J	9,600	551 J	0.16 J	28	2,650	5.4 U	0.16 J	775 U	1.5 J	33 J	226 J
J6	4/24/2007	J6-0-0.5	0-0.5	57	12,900	872	0.20 U	33	2,120 J	7.3 U	0.93 J	1,050 U	5.2 U	26	1,490
J6	4/24/2007	J6-0.5-1.0	0.5-1	26	7,170	382	0.23 U	15	1,220 J	6.5 U	0.49 J	929 U	4.6 U	13	373
J6	4/24/2007	J6-1.0-1.9	1-1.9	94	8,460	1,010	0.32 U	50	1,870 J	0.67 J	1.6 J	870 U	4.4 U	28	3,000
K.5-1.5	4/11/2007	K-5-1.5-0-0.5	0-0.5	135 J	11,300 J	905	0.58	29	2,340	9.4 U	1.1 J	1,350 U	6.7 U	30	3,420 J
K.5-1.5	4/11/2007	K-5-1.5-0.5-1.0	0.5-1	84 J	9,990 J	460	0.30	22	1,450	0.56 J	1.8 U	891 U	4.5 U	27	1,540 J
K.5-1.5	4/11/2007	K-5-1.5-1.0-1.8	1-1.8	61 J	8,440 J	208	0.13 J	16	926	6.0 U	1.7 U	861 U	4.3 U	21	1,200 J
K.5-2	4/12/2007	K.5-2-0-0.5	0-0.5	110	10,400	874	0.42	31	2,940 J	11 U	1.1 J	393 J	1.0 J	33	2,960
K.5-2	4/12/2007	K.5-2-0.5-1.0	0.5-1	105	11,900	874	0.46	34	3,190 J	8.4 U	1.0 J	348 J	1.1 J	38	3,080
K.5-2	4/12/2007	K.5-2-1.0-1.7	1-1.7	70	9,800	765	0.30	31	2,650 J	7.9 U	0.77 J	290 J	0.84 J	33	4,250
K-1.5	4/18/2007	K1.5-0-0.5	0-0.5	47 J	10,300	437	0.097 J	8.8 J	421 J	4.2 U	0.32 J	602 U	0.38 J	27 J	1,210 J
K-1.5	4/18/2007	K1.5-0.5-1.0	0.5-1	249 J	11,100	819	0.91	36 J	1,450 J	1.5 J	2.7	847 U	0.65 J	25 J	6,480 J
K-1.5	4/18/2007	K1.5-1.0-2.0	1-2	333 J	10,800	510	2.0	30 J	1,920 J	2.2 J	2.5	844 U	0.80 J	31 J	3,810 J

See Notes on Page 22.

Table B-14
Sediment TAL Metals and Cyanide Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval	Lead (mg/kg)	Magnesium (mg/kg)	Manganese (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Potassium (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Sodium (mg/kg)	Thallium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
K2	4/15/2007	K2-0-0.5	0-0.5	121	11,600	679	0.14	19	1,010 J	0.35 J	0.98 J	682 U	3.4 U	18	2,500
K2	4/15/2007	K2-0-0.5-1.0	0.5-1	112	9,690	425	0.30	26	1,310 J	5.7 U	0.99 J	808 U	4.0 U	23	1,510
K2	4/15/2007	K2-0-1.0-1.9	1-1.9	139	8,950	362	1.1	21	1,190 J	1.0 J	1.0 J	855 U	4.3 U	21	1,370
K2	4/14/2007	K2-2.0-4.0	2-4	190	11,600	492	0.80	23 J	1,240 J	0.36 J	0.95 J	168 J	3.8 U	23	1,770
K2	4/14/2007	K2-4.0-6.0	4-6	30	8,970	501	0.20	19 J	1,150 J	5.0 U	1.4 U	707 U	0.53 J	21	233
K2	4/14/2007	DUP-008	4-6	33	9,470	548	0.19	21 J	1,240 J	0.49 J	1.5 U	763 U	0.62 J	23	248
K2	4/14/2007	K2-6.0-8.0	6-8	26	9,000	441	0.076 J	18 J	746 J	5.2 U	1.5 U	744 U	0.77 J	20	212
K2	4/14/2007	K2-8.0-10.0	8-10	15	7,050	211	0.15 U	22 J	753 J	0.38 J	1.4 U	692 U	0.65 J	21	90
K2	4/14/2007	K2-10.0-12.0	10-12	8.6	28,900	429	0.13 U	14 J	698 J	4.0 U	1.1 U	570 U	0.97 J	14	36
K2	4/14/2007	K2-12.0-14.0	12-14	7.4	22,000	352	0.13 U	14 J	632 J	4.4 U	1.3 U	626 U	0.68 J	13	36
K2	4/14/2007	K2-14.0-14.8	14-14.8	8.6	22,800	371	0.13 U	11 J	541 J	4.2 U	1.2 U	596 U	0.53 J	8.6	27
K3	4/24/2007	K3-0-0.5	0-0.5	94	10,500	799	0.38	31	2,560 J	9.6 U	1.1 J	1,370 U	6.9 U	29	2,800
K3	4/24/2007	K3-0.5-1.0	0.5-1	81	9,660	722	0.37 U	42	2,450 J	8.2 U	1.1 J	1,170 U	5.9 U	32	3,280
K3	4/24/2007	K3-1.0-2.0	1-2	122	8,810	769	0.44	52	2,610 J	0.84 J	1.9 J	1,020 U	5.1 U	37	7,690
K4	4/17/2007	K4-0-0.5	0-0.5	68 J	11,500	812 J	0.29	30	2,500	8.3 U	0.93 J	1,180 U	5.9 U	27 J	2,130 J
K4	4/17/2007	K4-0.5-1.0	0.5-1	58 J	9,420	604 J	0.17	46	3,060	0.53 J	0.83 J	952 U	0.66 J	41 J	1,180 J
K4	4/17/2007	K4-1.0-2.0	1-2	76 J	8,930	680 J	0.20	46	2,750	6.2 U	1.3 J	887 U	0.80 J	39 J	1,780 J
K4	4/17/2007	K4-2-4	2-4	113 J	9,180	733	0.46	50	1,890 J	7.0 U	2.0 J	994 U	1.7 J	31	2,660 J
K4	4/17/2007	K4-4-6	4-6	128 J	7,770	513	0.75	36	1,860 J	0.63 J	1.6 J	934 U	1.0 J	31	991 J
K4	4/17/2007	K4-6-8	6-8	148	8,050	559	0.62	34 J	2,210 J	0.94 J	1.0 J	887 U	0.51 J	33	1,860 J
K4	4/17/2007	K4-8-10	8-10	120	9,970	613	0.79	28 J	2,040 J	0.42 J	0.49 J	794 U	1.0 J	31	548 J
K4	4/17/2007	K4-10-12	10-12	18	9,280	425	0.088 J	21 J	1,510 J	0.37 J	1.5 U	729 U	0.51 J	23	168 J
K4	4/17/2007	K4-12-13.8	12-13.8	11	20,400	288	0.071 J	19 J	1,000 J	4.1 U	1.2 U	588 U	0.75 J	19	59 J
K5	4/11/2007	K5-0-0.5	0-0.5	57 J	10,300 J	655	0.19	37	2,710	6.8 U	0.76 J	967 U	4.8 U	34	1,580 J
K5	4/11/2007	K5-0.5-1.0	0.5-1	61 J	8,010 J	642	0.14 J	42	2,720	6.5 U	0.75 J	927 U	4.6 U	40	1,430 J
K5	4/11/2007	K5-1.0-2.0	1-2	96 J	8,750 J	661	0.28	45	2,730	6.8 U	1.1 J	975 U	4.9 U	41	1,610 J
L.5-1.5	4/12/2007	L.5-1.5-0-0.5	0-0.5	141	11,100	963	0.69	31	2,770 J	11 U	1.3 J	390 J	7.7 U	34	3,740
L.5-1.5	4/12/2007	L.5-1.5-0.5-1.0	0.5-1	140	11,800	1,030	0.57	33	2,750 J	0.52 J	1.3 J	399 J	1.6 J	35	4,730
L.5-1.5	4/12/2007	L.5-1.5-1.0-2.0	1-2	179	10,500	867	0.41	40	1,960 J	0.97 J	1.8 J	485 J	0.78 J	31 J	9,240 J
L.5-2	4/12/2007	L.5-2-0.0.5	0-0.5	115	10,600	856	0.41	33	3,230 J	11 U	1.1 J	430 J	1.0 J	37	3,200
L.5-2	4/12/2007	L.5-2-0.5-1.0	0.5-1	104	11,600	937	0.45	36	3,310 J	8.2 U	1.1 J	338 J	1.2 J	40	3,590
L.5-2	4/12/2007	L.5-2-1.0-1.9	1-1.9	80	9,630	861	0.28	37	2,990 J	7.7 U	0.93 J	325 J	5.5 U	37	6,030
L.5-2	4/12/2007	DUP-005	1-1.9	81	10,400	879	0.33	38	3,100 J	7.9 U	0.95 J	333 J	5.7 U	39	6,440
L-1.5	4/10/2007	L1.5-0-0.5	0-0.5	340	13,000	457	0.25	21	681 J	0.78 J	2.6	188 J	0.44 J	18	4,570 J
L-1.5	4/10/2007	L1.5-0.5-1.1	0.5-1.1	53	13,400	252	0.078 J	6.6	261 J	4.4 UJ	0.18 J	626 U	3.1 U	10	600 J
L2	4/14/2007	L2-0-0.5	0-0.5	112	10,300	876	0.39	33	2,500 J	1.1 J	1.2 J	1,180 U	5.9 U	30 J	3,110 J
L2	4/14/2007	L2-0.5-1.0	0.5-1	113	11,300	927	0.46	38	2,610 J	9.1 UJ	1.4 J	434 J	6.5 U	33 J	3,550 J
L2	4/14/2007	L2-1.0-2.0	1-2	83 J	10,500	888	0.29	38	2,560 J	7.2 UJ	1.0 J	1,030 U	1.2 J	34 J	5,630 J
L2	4/14/2007	L2-2.0-4.0	2-4	86	9,540	740	0.27	44	2,920 J	0.51 J	1.1 J	350 J	0.64 J	38	5,470
L2	4/14/2007	L2-4.0-6.0	4-6	132	9,260	639	0.48	43	2,840 J	0.56 J	1.3 J	269 J	1.3 J	39	3,530
L2	4/14/2007	L2-6.0-8.0	6-8	69	10,000	691	0.43	30	2,370 J	6.6 U	0.43 J	204 J	0.77 J	33	511
L2	4/14/2007	L2-8.0-10.0	8-10	24	10,600	554	0.12 J	27	1,960 J	6.2 U	0.14 J	201 J	0.98 J	27	212
L2	4/14/2007	L2-10.0-12.0	10-12	13	20,500	321	0.12 U	18	744 J	4.2 U	1.2 U	594 U	1.2 J	18	72
L2	4/14/2007	L2-12.0-14.0	12-14	7.1	24,100	309	0.10 U	12	641 J	4.2 U	1.2 U	597 U	0.74 J	12	31
L2	4/14/2007	L2-14.0-15.0	14-15	4.9	17,500	188	0.11 U	14	414 J	3.8 U	1.1 U	549 U	0.52 J	11	27

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Location ID	Date Collected	Sample Name	Depth Interval	Lead (mg/kg)	Magnesium (mg/kg)	Manganese (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Potassium (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Sodium (mg/kg)	Thallium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
L3	4/18/2007	L3-0-0.5	0-0.5	103 J	11,400	879	0.56	34 J	2,810 J	1.0 J	0.94 J	1,420 U	7.1 U	33 J	2,900 J
L3	4/18/2007	L3-0.5-1.0	0.5-1	101 J	11,900	953	0.44	36 J	2,680 J	1.4 J	1.1 J	1,320 U	6.6 U	33 J	3,290 J
L3	4/18/2007	L3-1.0-1.6	1-1.6	70 J	11,400	891	0.34	35 J	2,410 J	7.4 U	0.94 J	1,050 U	0.95 J	32 J	4,010 J
M.5-1.5	4/16/2007	M.5-1.5-0-0.5	0-0.5	150 J	10,800	947	0.69	35	2,860 J	1.2 J	1.6 J	1,540 U	7.7 U	33 J	3,990 J
M.5-1.5	4/16/2007	M.5-1.5-0.5-1.0	0.5-1	142 J	11,300	992	0.61	36	2,780 J	0.93 J	1.5 J	1,200 U	0.75 J	34 J	4,280 J
M.5-1.5	4/16/2007	M.5-1.5-1.0-1.6	1-1.6	101	10,200	891	0.45	37	2,490 J	0.50 J	1.2 J	343 J	0.55 J	32	6,310
M.5-1.5	4/16/2007	M.5-1.5-2-4	2-4	167 J	9,120	700	0.72	44	2,530 J	1.6 J	1.6 J	987 U	4.9 U	36 J	6,530 J
M.5-1.5	4/16/2007	M.5-1.5-4-6	4-6	102 J	9,260	697	0.32	39	2,290 J	0.86 J	1.2 J	948 U	4.7 U	34 J	4,460 J
M.5-1.5	4/16/2007	M.5-1.5-6-8	6-8	19	12,700	680	0.17 U	21	1,590 J	5.4 U	0.14 J	776 U	0.51 J	21	476 J
M.5-1.5	4/16/2007	M.5-1.5-8-10	8-10	12	16,100	925	0.064 J	21	1,640 J	5.8 U	0.10 J	822 U	0.95 J	21	145 J
M.5-1.5	4/16/2007	M.5-1.5-10-12	10-12	11	17,200	680	0.059 J	20	1,550 J	5.3 U	0.10 J	763 U	0.99 J	20	64 J
M.5-1.5	4/16/2007	M.5-1.5-12-12.7	12-12.7	10	15,800	681	0.14 U	20	1,550 J	5.2 U	0.096 J	742 U	0.92 J	20	59 J
M.5-2	4/10/2007	M-5-2-0-0.5	0-0.5	115	9,790	780	0.40 J	31	2,410 J	12 U	1.3 J	466 J	8.7 U	29	3,190
M.5-2	4/10/2007	M-5-2-0.5-1.0	0.5-1	134	10,700	956	0.70 J	35	2,550 J	9.8 U	1.2 J	389 J	7.0 U	32	3,730
M.5-2	4/10/2007	M-5-2-1.0-2.0	1-2	102	9,560	932	0.30 J	35	2,460 J	8.6 U	1.1 J	362 J	6.2 U	31	5,740
M-1.5	4/18/2007	M1.5-0-0.5	0-0.5	152 J	11,000	978	0.98	36 J	2,840 J	1.2 J	1.5 J	1,590 U	7.9 U	33 J	4,170 J
M-1.5	4/18/2007	M1.5-0.5-1.0	0.5-1	122 J	10,900	984	0.64	37 J	2,760 J	1.1 J	1.2 J	843 J	5.5 U	35 J	4,640 J
M-1.5	4/18/2007	M1.5-1.0-2.0	1-2	100 J	10,000	883	0.47	40 J	2,780 J	0.73 J	1.1 J	866 J	0.90 J	36 J	8,040 J
M2	4/12/2007	M2-0-0.5	0-0.5	115	10,200	889	0.37	32	3,190 J	11 U	1.2 J	419 J	1.1 J	36	3,370
M2	4/12/2007	M2-0.5-1.0	0.5-1	121	10,600	924	0.51	34	3,340 J	9.5 U	1.1 J	350 J	0.80 J	38	3,590
M2	4/12/2007	M2-1.0-2.0	1-2	86	9,750	776	0.30	39	3,330 J	7.6 U	0.99 J	324 J	1.3 J	42	5,620
M3	4/11/2007	M3-0-0.5	0-0.5	104 J	11,200 J	989	0.42	33	2,860	9.0 U	0.85 J	1,280 U	6.4 U	32	3,110 J
M3	4/11/2007	DUP-004	0-0.5	60 J	8,600 J	440	0.30	41	3,070	6.2 U	0.84 J	885 U	4.4 U	42	428 J
M3	4/11/2007	M3-0.5-1.0	0.5-1	140 J	9,540 J	755	0.47	41	2,670	1.1 J	1.5 J	1,050 U	5.3 U	33	2,920 J
M3	4/11/2007	M3-1.0-2.0	1-2	61 J	8,790 J	453	0.29	42	3,020	0.55 J	0.95 J	956 U	4.8 U	42	427 J
N.5-1	4/16/2007	N.5-1-0-0.5	0-0.5	2,860	7,210	669	9.0	20	910 J	18	5.7	370 J	2.1 J	22	10,000
N.5-1	4/16/2007	N.5-1-0.5-1.0	0.5-1	14	7,700	1,150	0.34	13	803 J	5.9 U	1.7 U	276 J	2.0 J	16	75
N.5-1	4/16/2007	N.5-1-1.0-1.4	1-1.4	7.0	7,720	680	0.16 U	9.9	691 J	6.3 U	1.8 U	300 J	2.1 J	15	40
N.5-1	4/16/2007	N.5-1-2-4	2-4	46	7,450	493	0.28	9.4	651 J	0.50 J	0.29 J	339 J	5.6 U	11	381 J
N.5-1	4/16/2007	DUP-012	2-4	45 J	7,170	473	0.15 J	9.0 U	567 J	0.64 J	0.25 J	1,080 U	5.4 U	10 J	363 J
N.5-1	4/16/2007	N.5-1-4-6	4-6	8.3	22,500	329	0.14 U	13	791 J	4.8 U	0.080 J	688 U	0.69 J	15	42 J
N.5-1	4/16/2007	N.5-1-6-8	6-8	7.5	21,700	223	0.11 U	14	862 J	4.1 U	1.2 U	587 U	0.38 J	16	30 J
N.5-1	4/16/2007	N.5-1-8-10	8-10	8.6	22,000	272	0.17 U	18	882 J	5.8 U	1.7 U	882 U	4.2 U	19	42 J
N.5-1	4/16/2007	N.5-1-10-12	10-12	12	13,500	334	0.20 U	25	1,250 J	0.60 J	1.9 U	307 J	4.8 U	26	64 J
N.5-1	4/16/2007	N.5-1-12-14	12-14	12	12,700	403	0.083 J	24	1,580 J	0.63 J	2.3 U	293 J	5.7 U	26	66 J
N.5-1	4/16/2007	N.5-1-14-15.9	14-15.9	13 J	17,300	458	0.17 U	24	1,440 J	0.54 J	1.6 U	782 U	0.66 J	24 J	69 J

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Table B-14
Sediment TAL Metals and Cyanide Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval	Lead (mg/kg)	Magnesium (mg/kg)	Manganese (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Potassium (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Sodium (mg/kg)	Thallium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
N.5-1.5	4/15/2007	N.5-1.5-0-0.5	0-0.5	206	12,000	1,080	1.2	39	2,490 J	1.6 J	2.1 J	1,440 U	7.2 U	33	5,560
N.5-1.5	4/15/2007	N.5-1.5-0.5-1.0	0.5-1	210	11,300	1,030	1.4	37	2,360 J	2.0 J	2.1 J	1,260 U	6.3 U	32	6,030
N.5-1.5	4/15/2007	N.5-1.5-1.0-1.9	1-1.9	154	10,800	946	0.97	41	2,340 J	1.8 J	1.6 J	1,100 U	5.5 U	34	9,440
N.5-1.5	4/15/2007	N.5-1.5-2-4	2-4	184	9,270	820	0.88	42	2,120 J	1.8 J	2.0 J	1,040 U	5.2 U	31	10,600
N.5-1.5	4/15/2007	N.5-1.5-4-6	4-6	165	9,130	698	0.43	46	2,260 J	0.70 J	1.7 J	991 U	5.0 U	34	9,350
N.5-1.5	4/15/2007	N.5-1.5-6-8	6-8	142	9,360	592	0.69	37	1,790 J	0.76 J	1.5 J	907 U	4.5 U	29	5,400
N.5-1.5	4/15/2007	N.5-1.5-8-10	8-10	12	13,100	139	0.43	16	568 J	0.33 J	1.3 U	645 U	3.2 U	16	175
N.5-1.5	4/15/2007	N.5-1.5-10-12	10-12	12	18,800	224	0.15 U	19	812 J	5.4 U	1.6 U	775 U	3.9 U	17	81
N.5-1.5	4/15/2007	N.5-1.5-12-14	12-14	10	27,500	423	0.12 U	20	1,070 J	4.7 U	1.3 U	671 U	3.4 U	16	47
N.5-1.5	4/15/2007	DUP-011	12-14	10	27,000	418	0.12 U	19	1,070 J	4.8 U	1.4 U	689 U	3.4 U	16	47
N.5-1.5	4/15/2007	N.5-1.5-14-16	14-16	7.1	25,400	366	0.10 U	13	729 J	3.7 U	1.1 U	533 U	2.7 U	11	32
N.5-1.5	4/15/2007	N.5-1.5-16-16.4	16-16.4	5.1	18,200	266	0.11 U	8.1	446 J	3.6 U	1.0 U	512 U	2.6 U	7.8	24
N.5-2	4/10/2007	N-5-2-0-0.5	0-0.5	131	9,630	797	0.64 J	31	2,530 J	9.4 U	1.2 J	333 J	6.7 U	29	3,640
N.5-2	4/10/2007	N-5-2-0.5-1.0	0.5-1	155	10,700	936	0.76 J	36	2,690 J	0.56 J	1.4 J	382 J	6.3 U	34	4,810
N.5-2	4/10/2007	N-5-2-1.0-2.0	1-2	133	10,100	887	0.82 J	35	2,360 J	0.86 J	1.3 J	332 J	5.8 U	31	5,420
N-1.5	4/18/2007	N1.5-0-0.5	0-0.5	43 J	4,280	499	0.12 J	21 J	1,130 J	0.51 J	0.27 J	751 U	3.8 U	21 J	1,150 J
N-1.5	4/18/2007	N1.5-0.5-1.0	0.5-1	163 J	11,200	881	1.0	37 J	2,680 J	1.6 J	1.5 J	1,230 U	0.82 J	34 J	4,870 J
N-1.5	4/18/2007	N1.5-1.0-1.8	1-1.8	109 J	11,100	719	1.1	38 J	2,690 J	0.85 J	1.2 J	994 U	0.70 J	36 J	5,800 J
N2	4/13/2007	N2-0-0.5	0-0.5	149	10,900	982	0.76	36	2,670 J	1.3 J	1.6 J	1,320 U	1.0 J	33 J	4,120 J
N2	4/13/2007	N2-0.5-1.0	0.5-1	103	10,100	896	0.69	37	2,500 J	0.43 J	1.1 J	897 U	1.0 J	33 J	5,380 J
N2	4/13/2007	N2-1.0-2.0	1-2	97	9,820	965	0.22 U	42	2,580 J	7.7 UJ	1.3 J	1,100 U	5.5 U	36 J	8,470 J
N2	4/13/2007	N2-2.0-4.0	2-4	110	9,410	800	0.38	49	2,510 J	0.90 J	1.3 J	347 J	5.5 U	36	7,810
N2	4/13/2007	DUP-006	2-4	103	9,010	745	0.36	45	2,430 J	0.45 J	1.3 J	342 J	0.69 J	34	7,770
N2	4/13/2007	N2-4.0-6.0	4-6	204	8,720	677	1.5	38	2,240 J	0.66 J	1.6	244 J	0.96 J	34	3,880
N2	4/13/2007	N2-6.0-8.0	6-8	215	9,770	624	1.4	30	2,090 J	0.90 J	1.1 J	205 J	0.93 J	32	1,060
N2	4/13/2007	N2-8.0-10.0	8-10	33	9,670	616	0.23	29	2,040 J	0.49 J	0.22 J	168 J	0.83 J	31	357
N2	4/13/2007	N2-10.0-12.0	10-12	21	11,400	513	0.19	24	1,500 J	5.6 UJ	0.14 J	167 J	0.89 J	22	156
N2	4/13/2007	N2-12.0-14.0	12-14	13	11,400	460	0.18 U	25	1,370 J	0.45 J	1.5 U	146 J	0.71 J	22	81
N2	4/13/2007	N2-14.0-14.5	14-14.5	8.3	12,600	840	0.12 J	18	849 J	7.0 UJ	0.15 J	240 J	5.0 U	16	49
N3	4/18/2007	N3-0-0.5	0-0.5	58 J	6,130	604	0.29	20 J	1,430 J	0.57 J	0.45 J	881 U	4.4 U	19 J	2,010 J
N3	4/18/2007	N3--0.5-1.0	0.5-1	10 J	3,040	455	0.047 J	21 J	731 J	4.0 U	1.1 U	567 U	2.8 U	23 J	50 J
O.5-1.5	4/15/2007	O.5-1.5-0-0.5	0-0.5	245	11,500	954	2.7	33	2,390 J	3.2 J	2.5 J	476 J	7.1 U	29	6,560
O.5-1.5	4/15/2007	O.5-1.5-0.5-1.0	0.5-1	223	10,600	894	1.5	37	2,230 J	2.1 J	2.4	370 J	0.89 J	29	17,400
O.5-1.5	4/15/2007	O.5-1.5-1.0-1.9	1-1.9	180	8,740	746	0.95	36	1,800 J	1.3 J	2.2	287 J	4.2 U	25	11,500
O.5-1.5	4/15/2007	O.5-1.5-2-4	2-4	229	10,700	814	0.64	47	2,200 J	1.5 J	2.2	341 J	0.71 J	31	19,600
O.5-1.5	4/15/2007	O.5-1.5-4-6	4-6	553	9,190	526	4.0	34	2,180 J	1.6 J	2.2	218 J	1.3 J	32	4,420
O.5-1.5	4/15/2007	O.5-1.5-6-8	6-8	105	9,410	566	0.92	27	1,970 J	0.60 J	0.59 J	208 J	0.87 J	29	1,080
O.5-1.5	4/15/2007	O.5-1.5-8-10	8-10	35	12,400	295	0.030	25	989 J	0.37 J	1.5 U	156 J	3.6 U	23	352
O.5-1.5	4/15/2007	O.5-1.5-10-12	10-12	11	17,600	322	0.055 J	22	1,020 J	0.57 J	1.5 U	153 J	3.6 U	21	67 J
O.5-1.5	4/15/2007	O.5-1.5-12-13.2	12-13.2	9.3	30,900	498	0.13 U	16	1,270 J	4.3 U	1.2 U	153 J	0.65 J	15	39 J

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Table B-14
Sediment TAL Metals and Cyanide Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval	Lead (mg/kg)	Magnesium (mg/kg)	Manganese (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Potassium (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Sodium (mg/kg)	Thallium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
O.5-2	4/10/2007	O.5-2-0-0.5	0-0.5	142	9,450	753	0.85	29	2,020 J	0.85 J	1.4 J	350 J	6.9 U	25	4,720 J
O.5-2	4/10/2007	O-5-2-0.5-1.0	0.5-1	159	10,900	891	0.93 J	34	2,250 J	0.81 J	1.6 J	385 J	6.1 U	29	5,900
O.5-2	4/10/2007	O-5-2-1.0-2.0	1-2	144	11,000	882	0.65 J	45	2,460 J	7.5 U	1.6 J	319 J	5.4 U	33	11,600
O1	4/16/2007	O1-0-0.5	0-0.5	12,900 J	4,610	2,810	32	25	929 J	378 J	72 J	6,160 UD	2.7 J	26 J	65,100 JD
O1	4/16/2007	O1-0.5-1.0	0.5-1	6,990 J	6,430	4,700	3.9	29	1,220 J	25 J	51 J	5,270	3.9 J	43 J	9,900 >J
O1	4/16/2007	O1-1.0-1.9	1-1.9	2,100 J	8,340	1,010	13	26	1,750 J	5.0 J	10 J	856 U	1.8 J	33 J	12,800 JD
O1.5	4/10/2007	O1.5-0-0.5	0-0.5	229	10,600	951	1.6	34	2,580 J	2.7 J	2.1 J	349 J	1.3 J	31	6,230 J
O1.5	4/10/2007	O1.5-0.5-1.0	0.5-1	223	9,260	840	2.2	30	2,240 J	1.7 J	2.0 J	318 J	1.4 J	28	5,650 J
O1.5	4/10/2007	O1.5-1.0-2.0	1-2	172	9,410	875	1.3	38	2,350 J	1.2 J	1.8 J	247 J	1.0 J	32	11,100 J
O2	4/13/2007	O2-0-0.5	0-0.5	154	11,000	864	0.82	34	3,120 J	1.1 J	1.5 J	417 J	7.1 U	35	4,460
O2	4/13/2007	O2-0.5-1.0	0.5-1	131	9,240	710	0.78	28	2,550 J	0.73 J	1.3 J	308 J	0.60 J	30	3,880
O2	4/13/2007	O2-1.0-2.0	1-2	112	10,100	847	0.64	37	2,260 J	0.96 J	1.4 J	893 U	1.5 J	30 J	8,430 J
O2	4/13/2007	O2-2.0-4.0	2-4	124	9,810	777	0.45	45	2,380 J	1.1 J	1.5 J	340 J	0.91 J	34	9,950
O2	4/13/2007	O2-4.0-6.0	4-6	156	8,800	610	1.2	39	2,330 J	0.83 J	1.3 J	258 J	0.86 J	33	4,790
O2	4/13/2007	O2-6.0-8.0	6-8	305	8,720	533	2.5	29	2,110 J	0.68 J	1.5	197 J	1.0 J	32	1,610
O2	4/13/2007	O2-8.0-10.0	8-10	38	9,600	639	0.21	28	2,070 J	0.36 J	0.30 J	161 J	0.90 J	31	544
O2	4/13/2007	O2-10.0-12.0	10-12	32	11,400	507	0.22	25	1,580 J	5.5 UJ	0.15 J	159 J	1.4 J	22	189
O2	4/13/2007	O2-12.0-14.0	12-14	13	11,700	406	0.075 J	28	1,210 J	5.8 UJ	0.084 J	165 J	0.81 J	21	74
O2	4/13/2007	O2-14-14.4	14-14.4	13	12,900	287	0.081 J	30	1,050 J	0.94 J	1.8 U	151 J	0.76 J	26	70
P.5-1	4/16/2007	P.5-1-0-0.5	0-0.5	237	9,270	796	0.43	47	2,380 J	0.88 J	2.1	347 J	0.64 J	33	16,200
P.5-1	4/16/2007	P.5-1-0.5-1.0	0.5-1	158 J	11,500	807	0.43	43	2,600 J	0.35 J	2.5	676 U	1.7 J	38 J	7,980 J
P.5-1	4/16/2007	P.5-1-1.0-2.0	1-2	463 J	10,700	1,140	1.0	54	2,210 J	2.2 J	5.3	807 U	1.4 J	35 J	22,900 J
P.5-1.5	4/15/2007	P.5-1.5-0-0.5	0-0.5	429	10,400	1,110	0.83	35	1,620 J	0.40 J	3.6	884 U	4.4 U	24	18,300
P.5-1.5	4/15/2007	P.5-1.5-0.5-1.0	0.5-1	239	10,400	938	0.49	47	2,170 J	0.81 J	2.5	936 U	4.7 U	35	15,600
P.5-1.5	4/15/2007	P.5-1.5-1.0-2.0	1-2	210	10,400	918	0.39	39	2,330 J	5.3 U	2.4	750 U	3.8 U	37	14,300
P.5-1.5	4/15/2007	P.5-1.5-2-4	2-4	230	9,660	939	0.63	52	2,180 J	2.1 J	2.9	971 U	4.9 U	36	14,000
P.5-1.5	4/15/2007	P.5-1.5-4-6	4-6	295	8,210	550	1.9	38	1,840 J	2.1 J	2.4	1,040	3.4 U	31	3,470
P.5-1.5	4/15/2007	P.5-1.5-6-8	6-8	307	8,250	611	0.80	35 J	1,820 J	1.5 J	1.8 J	252 J	1.0 J	33	4,430
P.5-1.5	4/15/2007	P.5-1.5-8-10	8-10	489	9,700	668	3.8	29 J	1,610 J	1.1 J	1.8 J	225 J	1.6 J	29	2,480
P.5-1.5	4/15/2007	P.5-1.5-10-12	10-12	53	10,500	442	0.31	22 J	1,100 J	0.41 J	0.20 J	232 J	0.93 J	20	498
P.5-1.5	4/15/2007	P.5-1.5-12-14	12-14	16	13,300	229	0.14 U	26 J	829 J	0.41 J	1.4 U	174 J	0.98 J	23	109
P.5-1.5	4/15/2007	P.5-1.5-14-16	14-16	12	12,900	319	0.16 U	25 J	795 J	0.35 J	1.5 U	2,790	0.97 J	20	69
P.5-1.5	4/15/2007	P.5-1.5-16-16.7	16-16.7	11	21,700	317	0.13 U	21 J	580 J	4.7 U	1.3 U	670 U	0.77 J	18	51
P.5-2	4/10/2007	P-5-2-0-0.5	0-0.5	99	10,900	709	0.40 J	35	2,070 J	0.52 J	1.2 J	319 J	5.4 U	28	5,800
P.5-2	4/10/2007	P-5-2-0.5-1.0	0.5-1	63	8,120	492	0.12 J	42	2,160 J	6.6 U	0.86 J	257 J	4.7 U	35	2,150
P.5-2	4/10/2007	P-5-2-1.0-2.0	1-2	72	8,140	637	0.24 J	42	2,270 J	7.0 U	1.2 J	244 J	5.0 U	37	2,000
P1	4/10/2007	P1-0-0.5	0-0.5	1,280	8,780	1,050	2.6	55	1,930 J	7.1 J	16	2,280 U	5.7 U	32	47,900 J
P1	4/10/2007	P1-0.5-1.0	0.5-1	1,250	7,810	1,090	1.4 J	49	2,100 J	9.9	18	358 J	5.9 U	37	47,400
P1	4/10/2007	P1-1.0-2.0	1-2	1,150	8,070	772	2.0 J	43	1,980 J	9.1	16	290 J	5.4 U	32	31,100
P1	4/10/2007	DUP-002	1-2	1,080	8,540	765	2.0 J	44	2,120 J	8.3	14	326 J	5.5 U	34	28,000
P-1.5	4/16/2007	P1.5-0-0.5	0-0.5	307 J	10,600	1,310	1.2	32	1,720 J	1.1 J	4.5	946 U	1.5 J	24 J	16,300 J
P-1.5	4/16/2007	P1.5-0.5-1.0	0.5-1	309 J	9,670	770	1.2	41	2,250 J	1.4 J	4.6	773 U	1.4 J	36 J	11,000 J
P-1.5	4/16/2007	P1.5-1.0-2.0	1-2	164 J	9,530	930	0.37	47	2,700 J	0.82 J	2.4	859 U	1.6 J	40 J	14,200 J
P2	4/16/2007	P2-0-0.5	0-0.5	147 J	11,500	858	1.3	30	2,090 J	1.4 J	1.6 J	1,130 U	5.7 U	25 J	6,070 J
P2	4/16/2007	P2-0.5-1.0	0.5-1	103 J	11,900	704	0.30	52	2,640 J	0.65 J	2.1 J	1,020 U	5.1 U	37 J	3,020 J

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Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval	Lead (mg/kg)	Magnesium (mg/kg)	Manganese (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Potassium (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Sodium (mg/kg)	Thallium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
P2	4/16/2007	P2-1.0-2.0	1-2	98 J	8,620	875	0.25	46	2,410 J	0.67 J	1.5 J	865 U	0.89 J	38 J	6,720 J
P2	4/16/2007	P2-2-4	2-4	177 J	8,980	700	0.50	48	2,230 J	1.5 J	2.5 J	925 U	0.81 J	32 J	5,730 J
P2	4/16/2007	P2-4-6	4-6	190 J	8,120	507	1.3	36	2,190 J	1.1 J	1.9 J	845 U	4.2 U	33 J	1,880 J
P2	4/16/2007	P2-6-8	6-8	176 J	7,970	540	1.1	33	2,440 J	1.0 J	1.4 J	775 U	1.1 J	35 J	2,600 J
P2	4/16/2007	P2-8-10	8-10	347 J	8,700	667	3.0	30	2,310 J	0.56 J	1.6 J	827 U	0.51 J	33 J	2,430 J
P2	4/16/2007	P2-10-12	10-12	56 J	9,290	614	0.54	27	2,060 J	0.49 J	0.41 J	804 U	0.66 J	30 J	438 J
P2	4/16/2007	P2-12-14	12-14	22 J	10,900	508	0.18 U	24	1,690 J	6.3 UJ	1.8 U	898 U	0.60 J	24 J	146 J
P2	4/16/2007	P2-14-16	14-16	15 J	11,900	427	0.18 U	22	1,160 J	0.71 J	0.090 J	872 U	0.81 J	21 J	94 J
P2	4/16/2007	P2-16-16.8	16-16.8	9.7 J	12,500	447	0.19 U	21	886 J	0.68 J	1.8 U	894 U	4.5 U	18 J	57 J
Q.5-1.5	4/15/2007	Q5-1.5-0-0.5	0-0.5	207	11,600	957	1.8	33	1,920 J	1.5 J	2.6	392 J	0.99 J	24	11,800
Q.5-1.5	4/15/2007	Q.5-1.5-0.5-1.0	0.5-1	112 J	9,790	686	0.41 U	44	1,710 J	0.44 J	1.7 J	866 U	0.84 J	27 J	8,470 J
Q.5-1.5	4/15/2007	Q.5-1.5-1.0-2.0	1-2	202 J	10,100	1,010	0.69 U	46	1,930 J	0.83 J	2.3	946 U	1.0 J	33 J	10,800 J
Q.5-1.5	4/15/2007	Q.5-1.5-2-4	2-4	227	9,480	770	0.61	49	2,420 J	2.1 J	2.9	329 J	0.53 J	36	9,680 JD
Q.5-1.5	4/15/2007	Q.5-1.5-4-6	4-6	249	8,590	569	1.9	38	2,540 J	1.6 J	2.1	259 J	0.84 J	37	3,140 J
Q.5-1.5	4/15/2007	Q.5-1.5-6-8	6-8	275	8,050	593	1.5	33	2,680 J	2.0 J	1.8	259 J	4.3 U	39	4,490 J
Q.5-1.5	4/15/2007	Q.5-1.5-8-10	8-10	403	9,100	735	2.4	33	2,420 J	1.3 J	2.0	262 J	1.4 J	36	4,770 J
Q.5-1.5	4/15/2007	DUP-010	8-10	438	9,020	739	3.6	32	2,170 J	0.73 J	2.0	267 J	4.6 U	33	4,860
Q.5-1.5	4/15/2007	Q.5-1.5-10-12	10-12	115 J	9,880	669	1.2	28	1,800 J	6.2 U	0.63 J	882 U	1.2 J	30 J	877 J
Q.5-1.5	4/15/2007	Q.5-1.5-12-14	12-14	25	11,000	494	0.16 U	23	1,690 J	5.9 U	0.095 J	163 J	4.2 U	25	226 J
Q.5-1.5	4/15/2007	Q.5-1.5-14-16	14-16	12	14,300	427	0.17 U	19	1,210 J	5.7 U	1.6 U	168 J	4.1 U	19	69 J
Q.5-1.5	4/15/2007	Q.5-1.5-16-16.7	16-16.7	7.6	11,400	257	0.14 U	14	695 J	5.3 U	1.5 U	164 J	3.8 U	12	38 J
Q.5-2	4/10/2007	Q.5-2-0-0.5	0-0.5	80	11,000	846	0.29 J	31	2,010 J	6.9 U	1.1 J	316 J	4.9 U	25	5,830
Q.5-2	4/10/2007	Q.5-2-0.5-1.0	0.5-1	88	9,040	668	0.30	41	2,460 J	0.39 J	1.8	249 J	1.3 J	35	1,860 J
Q.5-2	4/10/2007	Q.5-2-1.0-2.0	1-2	107	8,420	724	0.37	45	2,610 J	6.8 UJ	1.6 J	240 J	1.8 J	38	5,260 J
Q1	4/10/2007	Q1-0-0.5	0-0.5	191	7,350	1,270	0.55	36	1,790 J	0.70 J	1.8	167 J	0.61 J	25	26,800 J
Q1	4/10/2007	Q1-0.5-1.0	0.5-1	117	8,440	1,120	0.25	47	2,450 J	5.7 UJ	1.2 J	443 J	1.1 J	37	13,200 J
Q1	4/10/2007	Q1-1.0-1.8	1-1.8	720	9,930	2,070	0.81	33	2,290 J	0.78 J	7.4	379 J	2.4 J	38	18,700 J
Q1.5	4/10/2007	Q1.5-0-0.5	0-0.5	156	10,500	1,060	0.64	42	1,990 J	1.0 J	2.1	131 J	1.5 J	27	27,700 J
Q1.5	4/10/2007	Q1.5-0.5-1.0	0.5-1	135	9,650	666	0.34	43	2,100 J	0.44 J	1.6 J	245 J	0.90 J	30	10,500 J
Q1.5	4/10/2007	Q1.5-1.0-2.0	1-2	80	8,310	548	0.25	40	2,310 J	6.5 UJ	1.3 J	248 J	0.55 J	37	2,620 J
Q1.5	4/10/2007	DUP-003	1-2	207	9,120	935	0.46	45	2,300 J	0.86 J	2.3	252 J	1.0 J	36	12,500 J
Q2	4/24/2007	Q2-0-0.5	0-0.5	96	10,700	684	1.3	31	1,960 J	0.72 J	1.2 J	1,090 U	5.4 U	24	6,060
Q2	4/24/2007	Q2-0.5-1.0	0.5-1	75	9,090	549	0.19 U	44	2,380 J	0.67 J	1.2 J	1,000 U	5.0 U	35	4,090
Q2	4/24/2007	Q2-1.0-2.0	1-2	85	8,780	811	0.30 U	45	2,440 J	6.5 U	1.6 J	930 U	4.7 U	37	3,410
R1	4/10/2007	R1-0-0.5	0-0.5	107	13,800	1,080	0.31 J	63	3,770	2.0 J	0.96 J	661 J	8.4 U	56	17,400
R1	4/10/2007	R1-0.5-1.0	0.5-1	62	8,990	438	0.19	44	2,720	0.81 J	0.73 J	400 J	3.8 U	37	5,010
R1	4/10/2007	R1-1.0-1.5	1-1.5	79	8,950	447	0.30	43	2,320 J	0.52 J	1.2 J	414 J	1.5 J	35	4,550 J
R-1.5	4/18/2007	R1.5-0-0.5	0-0.5	178 J	11,800	914	1.1	32 J	2,160 J	1.6 J	2.0 J	1,070 U	5.4 U	26 J	8,570 J
R-1.5	4/18/2007	R1.5-0.5-1.0	0.5-1	73 J	9,580	615	0.27	42 J	2,240 J	0.62 J	1.1 J	804 U	0.79 J	34 J	2,710 J
R-1.5	4/18/2007	R1.5--1.0-2.0	1-2	228 J	11,000	916	0.13 J	57 J	2,550 J	1.8 J	2.7	1,060 U	0.73 J	38 J	11,300 J
R2	4/10/2007	R2-0-0.5	0-0.5	70	12,100	757	0.45	35	2,750	0.70 J	0.94 J	266 J	4.9 U	32	5,590
R2	4/10/2007	R2-0.5-1.0	0.5-1	68	9,910	576	0.26	43	2,830	0.77 J	0.87 J	248 J	4.3 U	36	4,520
R2	4/10/2007	R2-1.0-2.0	1-2	78	9,610	673	0.34	45	2,860	0.81 J	1.2 J	248 J	4.5 U	41	2,440

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Table B-14
Sediment TAL Metals and Cyanide Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval	Lead (mg/kg)	Magnesium (mg/kg)	Manganese (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Potassium (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Sodium (mg/kg)	Thallium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
S1	4/15/2007	SI-0-0.5	0-0.5	76	8,810	638	0.30	38	1,900 J	1.0 J	1.1 J	400 J	0.70 J	29	4,090
S1	4/15/2007	SI-0.5-1.0	0.5-1	108	9,670	688	0.36	41	1,920 J	5.8 U	1.8	500 J	0.68 J	33	4,570
S1	4/15/2007	SI-1.0-1.9	1-1.9	155	7,390	539	0.25	41	1,380 J	1.0 J	1.6	413 J	3.7 U	28	6,630
S1	4/15/2007	S1-2-4	2-4	19	6,000	1,660	0.054 J	29	865 J	4.2 U	0.22 J	322 J	0.56 J	26	360
S1	4/15/2007	DUP-009	2-4	37	6,150	581	0.087 J	31	1,020 J	4.9 U	0.33 J	371 J	0.43 J	28	1,250
S1	4/15/2007	S1-4.0-6.1	4-6.1	9.0	22,800	681	0.12 U	18	736 J	4.1 U	1.2 U	234 J	0.96 J	18	36
S2	4/10/2007	S2-0-0.5	0-0.5	51	10,300	853	0.20	37	2,910	6.1 U	0.78 J	266 J	4.4 U	37	2,420
S2	4/10/2007	S2-0.5-1.0	0.5-1	52	10,100	669	0.23	40	2,790	0.43 J	0.79 J	252 J	3.7 U	38	1,650
S2	4/10/2007	S2-1.0-1.6	1-1.6	57	8,610	522	0.21	40	2,570	0.74 J	0.83 J	279 J	3.9 U	39	951
T1	4/10/2007	T1-0-0.5	0-0.5	59	8,550	571	0.26	31	1,810 J	6.7 UJ	0.80 J	384 J	0.76 J	27	3,170 J
T1	4/10/2007	T1-0.5-1.0	0.5-1	64	8,590	685	0.25	41	2,130 J	5.8 UJ	1.0 J	482 J	1.1 J	35	1,370 J
T1	4/10/2007	T1-1.0-1.4	1-1.4	124	8,370	545	0.43	42	2,140 J	0.88 J	1.7	483 J	0.71 J	35	4,630 J
SD-A	10/10/2007	SD-A 0-0.5	0-0.5	1,070	9,110	615	0.11 J	15	332 J	4.5 UJ	9.9	644 U	2.4 J	10	7,000
SD-A	10/10/2007	SD-F 0-0.5	0-0.5	1,330	13,300	667	0.17 J	16	320 J	4.5 UJ	10	273 J	2.3 J	54	7,210
SD-B	10/8/2007	SD-B 0-0.75	0-0.75	159	5,380	257	0.10 UJ	17	851 J	4.7 UJ	0.63 J	664 U	1.6 J	14	1,280
SD-C	10/8/2007	SD-C 0-0.7	0-0.7	8.4	10,500	171	0.11 UJ	9.0	653 J	4.6 UJ	1.3 U	654 U	1.7 J	15	53
SD-D	10/8/2007	SD-D 0-0.6	0-0.6	117	29,500	334	0.10 J	13	652 J	4.6 UJ	0.95 J	662 U	0.91 J	13	1,630
SD-E	10/8/2007	SD-E 0-0.5	0-0.5	291	32,600	323	0.13 UJ	8.8	287 J	4.2 UJ	2.0	262 J	1.3 J	8.4	3,820
SD-E	10/8/2007	SD-E 0.5-1	0.5-1	407	19,300	748	0.14 J	17	952 J	5.1 UJ	2.7	366 J	5.2	25	6,430
SD-E	10/8/2007	SD-E 1-1.8	1-1.8	326	4,430	215	0.36 J	13	433 J	4.9 UJ	2.6	696 U	1.2 J	11	3,800
Goose Lake															
GL-SDC-1	4/25/2007	GLSDC010-0.5	0-0.5	35	10,000	612	0.13 J	28	2,200 J	9.8 UJ	0.54 J	390 J	1.0 J	24	189
GL-SDC-1	4/25/2007	GLSDC010.5-1.0	0.5-1	69	9,020	736	0.28	53	2,400 J	8.0 UJ	1.2 J	299 J	0.82 J	35	335
GL-SDC-1	4/25/2007	GLSDC011.0-1.7	1-1.7	52	7,960	552	0.31	46	2,280 J	7.6 UJ	0.74 J	1,090 U	1.1 J	33	267
GL-SDC-1	4/25/2007	GLSDC01-2-4	2-4	52	7,930	489	0.46	38	2,910	7.5 U	0.62 J	256 J	0.69 J	40	261
GL-SDC-1	4/25/2007	DUP-017	2-4	48	7,840	469	0.38	48	2,940	6.8 U	0.54 J	257 J	1.3 J	39	244
GL-SDC-1	4/25/2007	GLSDC0104-6	4-6	46	7,240	430	0.44	35	2,720	5.8 U	0.52 J	212 J	1.8 J	38	220
GL-SDC-1	4/25/2007	GLSDC016-8	6-8	13	7,550	512	0.12 U	27	1,460	3.5 U	1.0 U	116 J	2.5 J	27	65
GL-SDC-1	4/25/2007	GLSDC018-10	8-10	8.3	11,100	516	0.12 U	17	975	4.1 U	1.2 U	587 U	1.6 J	19	45
GL-SDC-2	4/25/2007	GLSDC02-0-0.5	0-0.5	36	10,600	694	0.27 J	28	2,200 J	9.6 UJ	0.55 J	359 J	1.2 J	26	200
GL-SDC-2	4/25/2007	GLSDC02-0.5-1.0	0.5-1	39	9,960	619	0.20	31	2,060 J	6.7 U	1.9 U	960 U	1.8 J	27	211
GL-SDC-2	4/25/2007	GLSDC02-1.0-2.0	1-2	49	8,600	591	0.26	42	1,870 J	6.1 U	0.78 J	865 U	1.9 J	30	249
GL-SDC-2	4/25/2007	GLSDC02-2-4	2-4	52	8,350	552	0.36	35	2,670	6.3 U	0.70 J	216 J	2.4 J	36	253
GL-SDC-2	4/25/2007	GLSDC02-4-6	4-6	13	7,960	1,010	0.13 U	24	1,200	4.5 U	1.3 U	643 U	1.9 J	25	74
GL-SDC-2	4/25/2007	GLSDC02-6-8	6-8	11	9,550	203	0.13 U	19	988	4.0 U	1.2 U	578 U	1.2 J	20	60
GL-SDC-2	4/25/2007	GLSDC02-8-10	8-10	10	9,720	219	0.12 U	17	923	4.3 U	1.2 U	610 U	1.2 J	19	55
GL-SDC-2	4/25/2007	GLSDC0210-103	10-10.3	9.9	9,930	142	0.12 U	15	788	4.2 U	1.2 U	595 U	0.70 J	17	48

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Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval	Lead (mg/kg)	Magnesium (mg/kg)	Manganese (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Potassium (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Sodium (mg/kg)	Thallium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
GL-SDC-3	4/25/2007	GLSDC03-0-0.5	0-0.5	38 J	11,500	648 J	0.20 J	32	3,140 J	7.8 U	0.63 J	355 J	1.5 J	33 J	211 J
GL-SDC-3	4/25/2007	GLSDC03-0.5-1.0	0.5-1	59 J	10,300	699 J	0.29	48	3,150 J	6.9 U	1.0 J	295 J	1.7 J	40 J	296 J
GL-SDC-3	4/25/2007	GLSDC03-1.0-2.0	1-2	57 J	8,410	576 J	0.40	46	2,620 J	7.1 U	0.92 J	238 J	1.7 J	34 J	290 J
GL-SDC-3	4/25/2007	GLSDC-03-2-4	2-4	53 J	8,770	496 J	0.32	40	2,750 J	6.8 U	0.72 J	255 J	1.3 J	40 J	266 J
GL-SDC-3	4/25/2007	DUP-018	2-4	55 J	8,690	517 J	0.37	41	2,940 J	0.55 J	0.80 J	253 J	1.1 J	40 J	275 J
GL-SDC-3	4/25/2007	GLSDC-03-4-6	4-6	11 J	19,000	430 J	0.13 U	20	1,560 J	4.6 U	1.3 U	169 J	1.2 J	21 J	50 J
GL-SDC-3	4/25/2007	GLSDC-03-6-8	6-8	12 J	22,300	581 J	0.15 U	24	2,220 J	5.2 U	1.5 U	196 J	1.4 J	22 J	58 J
GL-SDC-3	4/25/2007	GLSDC-03-8-10	8-10	12 J	18,000	631 J	0.16 U	27	2,580 J	5.7 U	1.6 U	223 J	1.6 J	24 J	64 J
GL-SDC-3	4/25/2007	GLSDC-031011.6	10-11.6	12 J	15,200	555 J	0.18 U	28	2,500 J	6.3 U	1.8 U	244 J	1.4 J	26 J	73 J
GL-SDD-1	4/25/2007	GLSDD01-0-0.5	0-0.5	36	11,800	663	0.16 J	28	2,120 J	8.5 U	0.57 J	1,220 U	1.6 J	25	191
GL-SDD-1	4/25/2007	GLSDD01-0.5-1.0	0.5-1	54	9,560	605	0.32	39	1,930 J	6.6 U	1.0 J	941 U	1.5 J	28	263
GL-SDD-1	4/25/2007	GLSDD01-1.0-1.8	1-1.8	58	9,010	738	0.30	48	1,950 J	7.0 U	1.1 J	1,000 U	1.7 J	30	291
GL-SDD-1	4/25/2007	DUP-016	1-1.8	57	9,020	623	0.32	46	2,040 J	6.3 U	1.1 J	904 U	1.9 J	31	289
GL-SDD-2	4/25/2007	GLSDD020-0.5	0-0.5	44	10,400	733	0.20 J	39	2,460 J	8.3 U	0.69 J	1,180 U	1.8 J	31	230
GL-SDD-2	4/25/2007	GLSDD020.5-1.0	0.5-1	53	9,610	594	0.20 J	43	2,410 J	7.3 U	0.81 J	1,040 U	2.1 J	33	256
GL-SDD-2	4/25/2007	GLSDD021.0-1.6	1-1.6	74	9,840	782	0.29	54	2,310 J	7.3 U	1.5 J	1,050 U	2.2 J	34	370
GL-SDG-1	4/25/2007	GLSDG010-0.5	0-0.5	31	9,880	678	0.12 J	30	2,560	6.1 U	0.30 J	289 J	2.3 J	34	160
GL-SDG-1	4/25/2007	GLSDG010.5-1.0	0.5-1	33	8,360	576	0.13 J	33	2,330	5.4 U	0.33 J	237 J	2.5 J	36	165
GL-SDG-1	4/25/2007	GLSDG011.0-2.0	1-2	35	8,780	566	0.20	37	2,930	5.7 U	0.28 J	225 J	1.8 J	42	184
GL-SDG-2	4/25/2007	GLSDG02-0-0.5	0-0.5	41	11,700	658	0.23 J	35	3,340	8.2 U	0.60 J	397 J	2.4 J	34	226
GL-SDG-2	4/25/2007	GLSDG020.5-1.0	0.5-1	55	9,380	633	0.21	46	3,080	7.2 U	0.83 J	336 J	1.6 J	39	275
GL-SDG-2	4/25/2007	GLSDG021.0-2.0	1-2	68	9,490	767	0.34	59	3,060	6.6 U	1.2 J	289 J	2.4 J	38	350
GL-SDT-1	4/25/2007	GLSDT-01-0-0.5	0-0.5	37 J	10,800	691	0.13 J	32	3,130 J	8.3 U	0.56 J	1,190 U	6.0 U	34 J	212
GL-SDT-1	4/25/2007	GLSDT010.5-1.0	0.5-1	42	9,540	642	0.16 J	38	2,300 J	7.1 U	2.0 U	1,010 U	2.5 J	32	218
GL-SDT-1	4/25/2007	GLSDT011.0-1.8	1-1.8	54	8,530	680	0.30	48	2,190 J	7.0 U	0.86 J	1,010 U	2.0 J	33	269
GL-SDT-2	4/25/2007	GLSDT-02-0-0.5	0-0.5	30 J	10,000	614	0.15 J	24	2,430 J	7.5 U	0.47 J	1,060 U	0.70 J	26 J	171
GL-SDT-2	4/25/2007	GLSDT02-0.5-1.0	0.5-1	48	8,950	575	0.22	39	2,060 J	6.1 U	1.7 U	869 U	1.7 J	32	238
GL-SDT-2	4/25/2007	GLSDT02-1.0-1.9	1-1.9	56	9,090	608	0.30	44	2,220 J	6.6 U	0.95 J	948 U	2.3 J	33	281
GL-SDT-3	4/25/2007	GLSDT-03-0-0.5	0-0.5	37 J	10,300	715	0.14 J	31	2,760 J	6.8 U	0.57 J	975 U	1.2 J	30 J	204
GL-SDT-3	4/25/2007	GLSDT03-0.5-1.0	0.5-1	73	9,350	681	0.27	51	2,280 J	7.4 U	1.5 J	1,060 U	2.2 J	33	344
GL-SDT-3	4/25/2007	GLSDT031.0-1.7	1-1.7	58	8,400	551	0.49	44	2,170 J	7.1 U	1.0 J	1,020 U	2.3 J	32	296
GL-SDT-4	4/25/2007	GLSDT-04-0-0.5	0-0.5	31 J	10,400	480	0.18 J	23	2,070 J	6.5 U	0.56 J	933 U	1.0 J	22 J	167 J
GL-SDT-4	4/25/2007	GLSDT04-0.5-1.0	0.5-1	53	7,560	503	0.36	40	1,940 J	6.1 U	0.85 J	873 U	1.9 J	28	267
GL-SDT-4	4/25/2007	GLSDT041.0-1.9	1-1.9	70	9,280	592	0.42	43	1,910 J	6.4 U	1.4 J	921 U	2.3 J	28	348
GL-SDT-5	4/25/2007	GLSDT-05-0-0.5	0-0.5	38 J	10,400	662	0.15 J	32	3,140 J	8.1 U	0.54 J	1,150 U	1.0 J	32 J	207 J
GL-SDT-5	4/25/2007	GLSDT05-0.5-1.0	0.5-1	58	8,650	695	0.21 J	48	2,320 U	7.8 U	0.96 J	1,110 U	2.4 J	33	284
GL-SDT-5	4/25/2007	GLSDT05-1.0-2.0	1-2	55	8,010	619	0.32	46	2,290 J	7.5 U	0.78 J	1,080 U	2.3 J	33	279

Notes:
Concentrations are reported on a dry-weight basis.
Non-detect values reported at the reporting limit.
NA - not applicable
mg/kg - milligrams per kilogram
J - estimated value
JD - Estimated value. Sample re-analyzed at higher dilution factor.
R - rejected
U - The analyte was analyzed for but not detected.
UD - The analyte was re-analyzed at higher dilution factor, but not detected.
UJ - The analyte was analyzed for but not detected. Detection limit is estimated.

Table B-15
Sediment TAL Metals and General Chemistry SPLP Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval	Ammonia (mg/L)	Fluoride (mg/L)	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chromium (mg/L)	Cobalt (mg/L)	Copper (mg/L)
DePue Lake															
D5	4/18/2007	D5-0-0.5	0-0.5	1.0	0.21	NA	NA	0.0028 U	0.020 B	NA	0.00040 U	NA	0.010 U	NA	NA
D7	4/17/2007	D7-0-0.5	0-0.5	0.30	0.26	NA	NA	0.0028 U	0.025 B	NA	0.00040 U	NA	0.010 U	NA	NA
D9	4/17/2007	D9-0-0.5	0-0.5	0.13	0.14 B	NA	NA	0.0028 U	0.019 B	NA	0.00040 U	NA	0.010 U	NA	NA
F7	4/17/2007	F7-0-0.5	0-0.5	0.54	0.27	NA	NA	0.0028 U	0.020 B	NA	0.00040 U	NA	0.010 U	NA	NA
G8	4/24/2007	G8-0-0.5	0-0.5	0.089 B	0.10 B	NA	NA	0.0028 U	0.024 B	NA	0.0050 U	NA	0.010 U	NA	NA
J4	4/24/2007	J4-0-0.5	0-0.5	0.73	0.20 B	NA	NA	0.0028 U	0.029 B	NA	0.0050 U	NA	0.010 U	NA	NA
J6	4/24/2007	J6-0-0.5	0-0.5	0.64	0.22	NA	NA	0.0028 U	0.035 B	NA	0.0050 U	NA	0.010 U	NA	NA
K-1.5	4/18/2007	K1.5-0-0.5	0-0.5	0.18	0.15 B	NA	NA	0.0028 U	0.061 B	NA	0.0026 B	NA	0.0054 B	NA	NA
K2	4/15/2007	K2-0-0.5	0-0.5	NA	0.18 B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
K2	4/15/2007	K2-0-0.5-1.0	0.5-1	NA	0.33	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
K2	4/15/2007	K2-0-1.0-1.9	1-1.9	NA	0.40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
K2	4/14/2007	K2-2.0-4.0	2-4	NA	0.19 B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
K2	4/14/2007	K2-4.0-6.0	4-6	NA	0.20 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
K2	4/14/2007	DUP-008	4-6	NA	0.090 B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
K2	4/14/2007	K2-6.0-8.0	6-8	NA	0.20 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
K2	4/14/2007	K2-8.0-10.0	8-10	NA	0.20 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
K2	4/14/2007	K2-10.0-12.0	10-12	NA	0.20 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
K2	4/14/2007	K2-12.0-14.0	12-14	NA	0.20 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
K2	4/14/2007	K2-14.0-14.8	14-14.8	NA	0.20 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
L3	4/18/2007	L3-0-0.5	0-0.5	3.2	0.22	NA	NA	0.0028 U	0.036 B	NA	0.00040 U	NA	0.010 U	NA	NA
M-1.5	4/18/2007	M1.5-0-0.5	0-0.5	4.8	0.22	NA	NA	0.0028 U	0.043 B	NA	0.00040 U	NA	0.010 U	NA	NA
N.5-1	4/16/2007	N.5-1-6-8	6-8	NA	1.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N.5-1.5	4/15/2007	N.5-1.5-0-0.5	0-0.5	NA	0.20 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N.5-1.5	4/15/2007	N.5-1.5-0.5-1.0	0.5-1	NA	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N.5-1.5	4/15/2007	N.5-1.5-1.0-1.9	1-1.9	NA	0.33	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N.5-1.5	4/15/2007	N.5-1.5-2-4	2-4	NA	0.85	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N.5-1.5	4/15/2007	N.5-1.5-4-6	4-6	NA	1.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N.5-1.5	4/15/2007	N.5-1.5-8-10	8-10	NA	0.20 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N.5-1.5	4/15/2007	N.5-1.5-10-12	10-12	NA	0.20 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N.5-1.5	4/15/2007	N.5-1.5-12-14	12-14	NA	0.20 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N.5-1.5	4/15/2007	DUP-011	12-14	NA	0.20 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N.5-1.5	4/15/2007	N.5-1.5-14-16	14-16	NA	0.20 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N.5-1.5	4/15/2007	N.5-1.5-16-16.4	16-16.4	NA	0.20 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-1.5	4/18/2007	N1.5-0-0.5	0-0.5	2.4	0.26	NA	NA	0.0028 U	0.051 B	NA	0.0011 B	NA	0.0045 B	NA	NA
N3	4/18/2007	N3-0-0.5	0-0.5	1.1	0.17 B	NA	NA	0.0028 J	0.026 B	NA	0.00040 U	NA	0.010 U	NA	NA
O1	4/16/2007	O1-0-0.5	0-0.5	1.1	0.32	NA	NA	0.010 U	0.14 B	NA	0.0020 B	NA	0.00055 B	NA	NA
P.5-1	4/16/2007	P.5-1-0-0.5	0-0.5	1.2	0.51	NA	NA	0.0057 J	0.065 B	NA	0.0050 B	NA	0.012	NA	NA
P.5-1.5	4/15/2007	P.5-1.5-0-0.5	0-0.5	NA	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
P.5-1.5	4/15/2007	P.5-1.5-0.5-1.0	0.5-1	NA	7.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
P.5-1.5	4/15/2007	P.5-1.5-1.0-2.0	1-2	NA	13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
P.5-1.5	4/15/2007	P.5-1.5-2-4	2-4	NA	6.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

See Notes on Page 4.

Table B-15
Sediment TAL Metals and General Chemistry SPLP Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval	Ammonia (mg/L)	Fluoride (mg/L)	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chromium (mg/L)	Cobalt (mg/L)	Copper (mg/L)
P.5-1.5	4/15/2007	P.5-1.5-4-6	4-6	NA	1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
P.5-1.5	4/15/2007	P.5-1.5-6-8	6-8	NA	0.80	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
P.5-1.5	4/15/2007	P.5-1.5-8-10	8-10	NA	0.20 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
P.5-1.5	4/15/2007	P.5-1.5-10-12	10-12	NA	0.14 B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
P.5-1.5	4/15/2007	P.5-1.5-12-14	12-14	NA	0.20 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
P.5-1.5	4/15/2007	P.5-1.5-14-16	14-16	NA	0.11 B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
P.5-1.5	4/15/2007	P.5-1.5-16-16.7	16-16.7	NA	0.20 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
P-1.5	4/16/2007	P1.5-0-0.5	0-0.5	2.2	0.20 U	NA	NA	0.010 U	0.084 B	NA	0.0060	NA	0.012	NA	NA
R-1.5	4/18/2007	R1.5-0-0.5	0-0.5	1.9	0.29	NA	NA	0.0028 U	0.031 B	NA	0.00040 U	NA	0.010 U	NA	NA
SD-A	10/10/2007	SD-A 0-0.5	0-0.5	NA	0.20 U	0.89	0.018	0.014	0.055 B	0.00050 U	0.0044 B	19	0.010 U	0.00047 B	0.021
SD-A	10/10/2007	SD-F 0-0.5	0-0.5	NA	0.20 U	0.50	0.018	0.011	0.043 B	0.00050 U	0.0024 B	21	0.010 U	0.00030 U	0.014
SD-B	10/8/2007	SD-B 0-0.75	0-0.75	NA	0.20 U	4.8	0.0021 U	0.0065 B	0.054 B	0.00050 U	0.00045 B	19	0.0087 B	0.00098 B	0.012
SD-C	10/8/2007	SD-C 0-0.7	0-0.7	NA	0.20 U	2.8	0.0021 U	0.0033 U	0.034 B	0.00050 U	0.00020 U	10	0.0058 B	0.00030 U	0.0058
SD-D	10/8/2007	SD-D 0-0.6	0-0.6	NA	0.20 U	0.39	0.0046 B	0.0071 B	0.048 B	0.00050 U	0.00026 B	36	0.010 U	0.00030 U	0.0050 U
SD-E	10/8/2007	SD-E 0-0.5	0-0.5	NA	0.20 U	0.47	0.0089 B	0.0059 B	0.045 B	0.00050 U	0.015	18	0.010 U	0.00030 U	0.0094
SD-E	10/8/2007	SD-E 0.5-1	0.5-1	NA	0.20 U	3.7	0.015	0.012	0.11 B	0.00050 U	0.070	15	0.0095 B	0.0018 B	0.058
SD-E	10/8/2007	SD-E 1-1.8	1-1.8	NA	0.20 U	6.0	0.020	0.019	0.28	0.00050 U	0.064	17	0.016	0.0024 B	0.085
Goose Lake															
GL-SDC-3	4/25/2007	GLSDC03-0-0.5	0-0.5	NA	0.20 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GL-SDC-3	4/25/2007	GLSDC03-0.5-1.0	0.5-1	NA	0.29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GL-SDC-3	4/25/2007	GLSDC03-1.0-2.0	1-2	NA	0.34	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GL-SDC-3	4/25/2007	GLSDC-03-2-4	2-4	NA	0.22	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GL-SDC-3	4/25/2007	DUP-018	2-4	NA	0.22	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GL-SDC-3	4/25/2007	GLSDC-03-4-6	4-6	NA	0.20 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GL-SDC-3	4/25/2007	GLSDC-03-6-8	6-8	NA	0.20 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GL-SDC-3	4/25/2007	GLSDC-03-8-10	8-10	NA	0.20 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GL-SDC-3	4/25/2007	GLSDC-031011.6	10-11.6	NA	0.20 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GL-SDT-1	4/25/2007	GLSDT-01-0-0.5	0-0.5	0.70	0.20 U	NA	NA	0.0028 B	0.053 B	NA	0.00020 U	NA	0.0090 B	NA	NA
GL-SDT-2	4/25/2007	GLSDT-02-0-0.5	0-0.5	1.2	0.20 U	NA	NA	0.0053 B	0.079 B	NA	0.00020 U	NA	0.019	NA	NA
GL-SDT-3	4/25/2007	GLSDT-03-0-0.5	0-0.5	0.36	0.18 B	NA	NA	0.0027 U	0.064 B	NA	0.00020 U	NA	0.013	NA	NA
GL-SDT-4	4/25/2007	GLSDT-04-0-0.5	0-0.5	0.99	0.20 U	NA	NA	0.0027 U	0.048 B	NA	0.00020 U	NA	0.0091 B	NA	NA
GL-SDT-5	4/25/2007	GLSDT-05-0-0.5	0-0.5	2.4	0.20 U	NA	NA	0.0040 B	0.049 B	NA	0.00020 U	NA	0.010	NA	NA

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Table B-15
Sediment TAL Metals and General Chemistry SPLP Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Silver (mg/L)	Sodium (mg/L)	Thallium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
DePue Lake																
D5	4/18/2007	D5-0-0.5	0-0.5	NA	0.0030 U	NA	NA	0.00010 U	NA	NA	0.0027 U	0.0012 U	NA	NA	NA	NA
D7	4/17/2007	D7-0-0.5	0-0.5	NA	0.0030 U	NA	NA	0.00010 UJ	NA	NA	0.0027 U	0.0012 U	NA	NA	NA	NA
D9	4/17/2007	D9-0-0.5	0-0.5	NA	0.0032 U	NA	NA	0.00010 UJ	NA	NA	0.0027 U	0.0012 U	NA	NA	NA	NA
F7	4/17/2007	F7-0-0.5	0-0.5	NA	0.0030 U	NA	NA	0.00010 UJ	NA	NA	0.0027 U	0.0012 U	NA	NA	NA	NA
G8	4/24/2007	G8-0-0.5	0-0.5	NA	0.0030 U	NA	NA	0.00010 U	NA	NA	0.0027 U	0.0012 U	NA	NA	NA	NA
J4	4/24/2007	J4-0-0.5	0-0.5	NA	0.0010 U	NA	NA	0.00010 U	NA	NA	0.0027 U	0.0012 U	NA	NA	NA	NA
J6	4/24/2007	J6-0-0.5	0-0.5	NA	0.0010 U	NA	NA	0.00010 U	NA	NA	0.0027 U	0.0012 U	NA	NA	NA	NA
K-1.5	4/18/2007	K1.5-0-0.5	0-0.5	NA	0.025	NA	NA	0.00010 U	NA	NA	0.0027 U	0.0012 U	NA	NA	NA	NA
K2	4/15/2007	K2-0-0.5	0-0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
K2	4/15/2007	K2-0-0.5-1.0	0.5-1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
K2	4/15/2007	K2-0-1.0-1.9	1-1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
K2	4/14/2007	K2-2.0-4.0	2-4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
K2	4/14/2007	K2-4.0-6.0	4-6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
K2	4/14/2007	DUP-008	4-6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
K2	4/14/2007	K2-6.0-8.0	6-8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
K2	4/14/2007	K2-8.0-10.0	8-10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
K2	4/14/2007	K2-10.0-12.0	10-12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
K2	4/14/2007	K2-12.0-14.0	12-14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
K2	4/14/2007	K2-14.0-14.8	14-14.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
L3	4/18/2007	L3-0-0.5	0-0.5	NA	0.0030 U	NA	NA	0.00010 U	NA	NA	0.0027 U	0.0012 U	NA	NA	NA	NA
M-1.5	4/18/2007	M1.5-0-0.5	0-0.5	NA	0.0035	NA	NA	0.00010 U	NA	NA	0.0027 U	0.0012 U	NA	NA	NA	NA
N.5-1	4/16/2007	N.5-1-6-8	6-8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N.5-1.5	4/15/2007	N.5-1.5-0-0.5	0-0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N.5-1.5	4/15/2007	N.5-1.5-0.5-1.0	0.5-1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N.5-1.5	4/15/2007	N.5-1.5-1.0-1.9	1-1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N.5-1.5	4/15/2007	N.5-1.5-2-4	2-4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N.5-1.5	4/15/2007	N.5-1.5-4-6	4-6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N.5-1.5	4/15/2007	N.5-1.5-8-10	8-10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N.5-1.5	4/15/2007	N.5-1.5-10-12	10-12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N.5-1.5	4/15/2007	N.5-1.5-12-14	12-14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N.5-1.5	4/15/2007	DUP-011	12-14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N.5-1.5	4/15/2007	N.5-1.5-14-16	14-16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N.5-1.5	4/15/2007	N.5-1.5-16-16.4	16-16.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-1.5	4/18/2007	N1.5-0-0.5	0-0.5	NA	0.0078	NA	NA	0.00010 U	NA	NA	0.0027 U	0.0012 U	NA	NA	NA	NA
N3	4/18/2007	N3-0-0.5	0-0.5	NA	0.0030 U	NA	NA	0.00010 U	NA	NA	0.0027 U	0.0012 U	NA	NA	NA	NA
O1	4/16/2007	O1-0-0.5	0-0.5	NA	0.045	NA	NA	0.00010 UJ	NA	NA	0.0027 U	0.0012 U	NA	NA	NA	NA
P.5-1	4/16/2007	P.5-1-0-0.5	0-0.5	NA	0.029	NA	NA	0.00010 UJ	NA	NA	0.0027 U	0.0012 U	NA	NA	NA	NA
P.5-1.5	4/15/2007	P.5-1.5-0-0.5	0-0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
P.5-1.5	4/15/2007	P.5-1.5-0.5-1.0	0.5-1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
P.5-1.5	4/15/2007	P.5-1.5-1.0-2.0	1-2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
P.5-1.5	4/15/2007	P.5-1.5-2-4	2-4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

See Notes on Page 4.

Table B-15
Sediment TAL Metals and General Chemistry SPLP Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Silver (mg/L)	Sodium (mg/L)	Thallium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
P.5-1.5	4/15/2007	P.5-1.5-4-6	4-6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
P.5-1.5	4/15/2007	P.5-1.5-6-8	6-8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
P.5-1.5	4/15/2007	P.5-1.5-8-10	8-10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
P.5-1.5	4/15/2007	P.5-1.5-10-12	10-12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
P.5-1.5	4/15/2007	P.5-1.5-12-14	12-14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
P.5-1.5	4/15/2007	P.5-1.5-14-16	14-16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
P.5-1.5	4/15/2007	P.5-1.5-16-16.7	16-16.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
P-1.5	4/16/2007	P1.5-0-0.5	0-0.5	NA	0.038	NA	NA	0.00010 UJ	NA	NA	0.0027 U	0.0012 U	NA	NA	NA	NA
R-1.5	4/18/2007	R1.5-0-0.5	0-0.5	NA	0.0036	NA	NA	0.00010 U	NA	NA	0.0027 U	0.0012 U	NA	NA	NA	NA
SD-A	10/10/2007	SD-A 0-0.5	0-0.5	1.7	0.17 J	3.5 B	0.017	0.00010 U	0.0027 B	0.37 B	R	0.0013 B	20	0.0077 U	0.0037 B	0.90
SD-A	10/10/2007	SD-F 0-0.5	0-0.5	0.91	0.093 J	3.6 B	0.0093 B	0.00010 U	0.0014 B	0.34 B	0.0051 J	0.00079 B	20	0.0077 U	0.0027 B	0.48
SD-B	10/8/2007	SD-B 0-0.75	0-0.75	6.5	0.022 J	5.0 B	0.024	0.00010 U	0.0050 B	0.93 B	R	0.00070 U	38	0.0077 U	0.012 B	0.082
SD-C	10/8/2007	SD-C 0-0.7	0-0.7	4.3	0.0031 UJ	3.5 B	0.013	0.00010 U	0.0023 B	0.56 B	R	0.00070 U	42	0.0077 U	0.0084 B	0.011 B
SD-D	10/8/2007	SD-D 0-0.6	0-0.6	0.37	0.0022 J	7.9	0.0093 B	0.00010 U	0.00096 B	0.58 B	R	0.00070 U	22	0.0077 U	0.0050 B	0.043
SD-E	10/8/2007	SD-E 0-0.5	0-0.5	0.89	0.038 J	4.0 B	0.010	0.00010 U	0.0014 B	0.28 B	R	0.00073 B	17	0.0077 U	0.0030 B	0.47
SD-E	10/8/2007	SD-E 0.5-1	0.5-1	5.8	0.20 J	4.1 B	0.044	0.00010 U	0.0069 B	0.68 B	R	0.00070 U	20	0.0077 U	0.010 B	3.1
SD-E	10/8/2007	SD-E 1-1.8	1-1.8	8.2	0.30 J	5.0	0.059	0.00017 B	0.010 B	1.1 B	R	0.0013 B	21	0.0077 U	0.015 B	3.2
Goose Lake																
GL-SDC-3	4/25/2007	GLSDC03-0-0.5	0-0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GL-SDC-3	4/25/2007	GLSDC03-0.5-1.0	0.5-1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GL-SDC-3	4/25/2007	GLSDC03-1.0-2.0	1-2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GL-SDC-3	4/25/2007	GLSDC-03-2-4	2-4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GL-SDC-3	4/25/2007	DUP-018	2-4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GL-SDC-3	4/25/2007	GLSDC-03-4-6	4-6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GL-SDC-3	4/25/2007	GLSDC-03-6-8	6-8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GL-SDC-3	4/25/2007	GLSDC-03-8-10	8-10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GL-SDC-3	4/25/2007	GLSDC-031011.6	10-11.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GL-SDT-1	4/25/2007	GLSDT-01-0-0.5	0-0.5	NA	0.0052 U	NA	NA	0.00010 U	NA	NA	0.0029 UJ	0.00050 U	NA	NA	NA	NA
GL-SDT-2	4/25/2007	GLSDT-02-0-0.5	0-0.5	NA	0.015 U	NA	NA	0.00010 U	NA	NA	0.0029 UJ	0.00050 U	NA	NA	NA	NA
GL-SDT-3	4/25/2007	GLSDT-03-0-0.5	0-0.5	NA	0.0077 U	NA	NA	0.00010 U	NA	NA	0.0029 UJ	0.00050 U	NA	NA	NA	NA
GL-SDT-4	4/25/2007	GLSDT-04-0-0.5	0-0.5	NA	0.0053 U	NA	NA	0.00010 U	NA	NA	0.0029 UJ	0.00050 U	NA	NA	NA	NA
GL-SDT-5	4/25/2007	GLSDT-05-0-0.5	0-0.5	NA	0.0068 U	NA	NA	0.00010 U	NA	NA	0.0029 UJ	0.00050 U	NA	NA	NA	NA

Notes:
Non-detect values reported at the reporting limit.
NA - not applicable
mg/L - milligram per liter
B - Result value is less than the reporting limit, but greater than the method detection limit.
J - estimated value
R - rejected
U - The analyte was analyzed for but not detected.
UJ - The analyte was analyzed for but not detected. Detection limit is estimated.

Table B-16
Sediment PAH Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval	1-Methylnaphthalene (mg/kg)	2-Methylnaphthalene (mg/kg)	Acenaphthene (mg/kg)	Acenaphthylene (mg/kg)	Anthracene (mg/kg)
DePue Lake								
D5	4/18/2007	D5-0-0.5	0-0.5	0.0078 J	0.016 J	0.0091 J	0.042	0.043
D7	4/17/2007	D7-0-0.5	0-0.5	0.0079 J	0.015 J	0.013 J	0.044	0.043
D9	4/17/2007	D9-0-0.5	0-0.5	0.0079 J	0.014 J	0.018 J	0.063	0.061
F7	4/17/2007	F7-0-0.5	0-0.5	0.0065 J	0.013 J	0.011 J	0.040	0.041
G8	4/24/2007	G8-0-0.5	0-0.5	0.0053 J	0.011 J	0.0097 J	0.049	0.039
J4	4/24/2007	J4-0-0.5	0-0.5	0.0033 J	0.0059 J	0.0056 J	0.021 J	0.019 J
J6	4/24/2007	J6-0-0.5	0-0.5	0.0070 J	0.014 J	0.013 J	0.061	0.052
K-1.5	4/18/2007	K1.5-0-0.5	0-0.5	0.0041 J	0.0061 J	0.0075 J	0.0063 J	0.018
K2	4/15/2007	K2-0-0.5	0-0.5	0.0022 J	0.0035 J	0.0035 J	0.0085 J	0.012 J
K2	4/15/2007	K2-0-0.5-1.0	0.5-1	0.0065 J	0.0098 J	0.019	0.021	0.048 D
K2	4/15/2007	K2-0-1.0-1.9	1-1.9	0.0019 J	0.0040 J	0.011 J	0.012 J	0.023
K2	4/14/2007	K2-2.0-4.0	2-4	0.013 J	0.023	0.040	0.18	0.20
K2	4/14/2007	K2-4.0-6.0	4-6	0.0027 J	0.0043 J	0.067	0.031	0.12 J
K2	4/14/2007	DUP-008	4-6	0.0021 J	0.0034 J	0.053	0.022	0.088 J
K2	4/14/2007	K2-6.0-8.0	6-8	0.012 U	0.012 U	0.0075 J	0.0052 J	0.033
K2	4/14/2007	K2-8.0-10.0	8-10	0.012 U	0.012 U	0.0018 J	0.0013 J	0.0055 J
K2	4/14/2007	K2-10.0-12.0	10-12	0.011 U	0.011 U	0.011 U	0.011 U	0.00067 J
K2	4/14/2007	K2-12.0-14.0	12-14	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
K2	4/14/2007	K2-14.0-14.8	14-14.8	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
L3	4/18/2007	L3-0-0.5	0-0.5	0.0067 J	0.013 J	0.0098 J	0.023 J	0.031
M-1.5	4/18/2007	M1.5-0-0.5	0-0.5	0.011 J	0.022 J	0.013 J	0.032	0.050
N.5-1.5	4/15/2007	N.5-1.5-0-0.5	0-0.5	0.0099 J	0.015 J	0.013 J	0.025 J	0.043
N.5-1.5	4/15/2007	N.5-1.5-0.5-1.0	0.5-1	0.0049 J	0.0077 J	0.0066 J	0.013 J	0.022
N.5-1.5	4/15/2007	N.5-1.5-1.0-1.9	1-1.9	0.013 J	0.025	0.017 J	0.047 D	0.079 D
N.5-1.5	4/15/2007	N.5-1.5-2-4	2-4	0.0062 J	0.0094 J	0.0061 J	0.010 J	0.017 J
N.5-1.5	4/15/2007	N.5-1.5-4-6	4-6	0.0088 J	0.014 J	0.012 J	0.015 J	0.027
N.5-1.5	4/15/2007	N.5-1.5-6-8	6-8	0.0059 J	0.0094 J	0.0098 J	0.011 J	0.021
N.5-1.5	4/15/2007	N.5-1.5-8-10	8-10	0.011 U	0.011 U	0.011 U	0.011 U	0.00052 J
N.5-1.5	4/15/2007	N.5-1.5-10-12	10-12	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U
N.5-1.5	4/15/2007	N.5-1.5-12-14	12-14	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
N.5-1.5	4/15/2007	DUP-011	12-14	0.012 U	0.012 U	0.0011 J	0.012 U	0.00054 J
N.5-1.5	4/15/2007	N.5-1.5-14-16	14-16	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
N.5-1.5	4/15/2007	N.5-1.5-16-16.4	16-16.4	0.00099 J	0.00094 J	0.011 U	0.011 U	0.0010 J
N-1.5	4/18/2007	N1.5-0-0.5	0-0.5	0.015 J	0.028 J	0.017 J	0.037 J	0.063 J
N3	4/18/2007	N3-0-0.5	0-0.5	0.0033 J	0.0060 J	0.0055 J	0.013 J	0.016 J
O1	4/16/2007	O1-0-0.5	0-0.5	2.7 D	3.4 D	0.77 D	0.62 D	1.1 D
P.5-1	4/16/2007	P.5-1-0-0.5	0-0.5	0.011 J	0.018	0.011 J	0.029	0.047

See Notes on Page 6.

Table B-16
Sediment PAH Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval	1-Methylnaphthalene (mg/kg)	2-Methylnaphthalene (mg/kg)	Acenaphthene (mg/kg)	Acenaphthylene (mg/kg)	Anthracene (mg/kg)
P.5-1.5	4/15/2007	P.5-1.5-0-0.5	0-0.5	0.013 J	0.019	0.0098 J	0.031	0.038
P.5-1.5	4/15/2007	P.5-1.5-0.5-1.0	0.5-1	0.011 J	0.016 J	0.018	0.030	0.049
P.5-1.5	4/15/2007	P.5-1.5-1.0-2.0	1-2	0.0043 J	0.0079 J	0.0079 J	0.013 J	0.017
P.5-1.5	4/15/2007	P.5-1.5-2-4	2-4	0.017 J	0.031 J	0.039	0.045	0.073
P.5-1.5	4/15/2007	P.5-1.5-4-6	4-6	0.0061 J	0.012 J	0.028 J	0.037	0.068
P.5-1.5	4/15/2007	P.5-1.5-6-8	6-8	0.0045 J	0.013 J	0.026	0.048	0.079
P.5-1.5	4/15/2007	P.5-1.5-8-10	8-10	0.0026 J	0.010 J	0.012 J	0.056	0.065
P.5-1.5	4/15/2007	P.5-1.5-10-12	10-12	0.015 U	0.0016 J	0.0035 J	0.0059 J	0.0091 J
P.5-1.5	4/15/2007	P.5-1.5-12-14	12-14	0.012 U	0.012 U	0.012 U	0.012 U	0.00076 J
P.5-1.5	4/15/2007	P.5-1.5-14-16	14-16	0.013 U	0.013 U	0.013 U	0.013 U	0.00059 J
P.5-1.5	4/15/2007	P.5-1.5-16-16.7	16-16.7	0.011 U	0.011 U	0.011 U	0.011 U	0.00045 J
P-1.5	4/16/2007	P1.5-0-0.5	0-0.5	0.028	0.050	0.026	0.056	0.10
R-1.5	4/18/2007	R1.5-0-0.5	0-0.5	0.016 J	0.027	0.016 J	0.042	0.068
SD-A	10/10/2007	SD-A 0-0.5	0-0.5	0.014	0.017	0.018 J	0.022	0.062 J
SD-A	10/10/2007	SD-F 0-0.5	0-0.5	0.0073	0.011	0.015	0.063	0.16 JD
SD-B	10/8/2007	SD-B 0-0.75	0-0.75	0.00098 J	0.0013 J	0.0017 J	0.0026 J	0.0067
SD-C	10/8/2007	SD-C 0-0.7	0-0.7	0.0055 U	0.0055 U	0.0055 U	0.00093 J	0.0029 J
SD-D	10/8/2007	SD-D 0-0.6	0-0.6	0.0080	0.011	0.017	0.014	0.052
SD-E	10/8/2007	SD-E 0-0.5	0-0.5	0.70 JD	1.0 JD	2.3 D	0.28 JD	3.2 D
SD-E	10/8/2007	SD-E 0.5-1	0.5-1	0.034	0.042	0.061	0.054	0.15 D
SD-E	10/8/2007	SD-E 1-1.8	1-1.8	0.027	0.039	0.027	0.058	0.13 D
Goose Lake								
GL-SDC-3	4/25/2007	GLSDC03-0-0.5	0-0.5	0.0057 J	0.012 J	0.011 J	0.066	0.056
GL-SDC-3	4/25/2007	GLSDC03-0.5-1.0	0.5-1	0.0047 J	0.012 J	0.013 J	0.066	0.068
GL-SDC-3	4/25/2007	GLSDC03-1.0-2.0	1-2	0.0061 J	0.016 J	0.019	0.11	0.11
GL-SDC-3	4/25/2007	GLSDC-03-2-4	2-4	0.0054 J	0.0095 J	0.0061 J	0.034 J	0.028 J
GL-SDC-3	4/25/2007	DUP-018	2-4	0.0060 J	0.016 J	0.022 J	0.13 J	0.13 J
GL-SDC-3	4/25/2007	GLSDC-03-4-6	4-6	0.011 U	0.00091 J	0.00093 J	0.0020 J	0.0018 J
GL-SDC-3	4/25/2007	GLSDC-03-6-8	6-8	0.012 U	0.012 U	0.012 U	0.012 U	0.00071 J
GL-SDC-3	4/25/2007	GLSDC-03-8-10	8-10	0.014 U	0.014 U	0.014 U	0.014 U	0.00057 J
GL-SDC-3	4/25/2007	GLSDC-031011.6	10-11.6	0.0021 J	0.0016 J	0.0013 J	0.015 U	0.0015 J
GL-SDT-1	4/25/2007	GLSDT-01-0-0.5	0-0.5	0.0075 J	0.013 J	0.0077 J	0.041	0.035
GL-SDT-2	4/25/2007	GLSDT-02-0-0.5	0-0.5	0.0064 J	0.012 J	0.0085 J	0.048	0.037
GL-SDT-3	4/25/2007	GLSDT-03-0-0.5	0-0.5	0.0057 J	0.011 J	0.012 J	0.066	0.068
GL-SDT-4	4/25/2007	GLSDT-04-0-0.5	0-0.5	0.0079 J	0.016 J	0.015 J	0.083	0.078
GL-SDT-5	4/25/2007	GLSDT-05-0-0.5	0-0.5	0.0038 J	0.0065 J	0.0061 J	0.031	0.026

See Notes on Page 6.

Table B-16
Sediment PAH Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval	Benzo(a)anthracene (mg/kg)	Benzo(a)pyrene (mg/kg)	Benzo(b)fluoranthene (mg/kg)	Benzo(g,h,i)perylene (mg/kg)	Benzo(k)fluoranthene (mg/kg)	Chrysene (mg/kg)
DePue Lake									
D5	4/18/2007	D5-0-0.5	0-0.5	0.11	0.17	0.23 D	0.17	0.16 D	0.21
D7	4/17/2007	D7-0-0.5	0-0.5	0.18	0.24	0.26	0.22	0.27	0.27
D9	4/17/2007	D9-0-0.5	0-0.5	0.26	0.32	0.65 XJ	0.28	0.51 XJ	0.37
F7	4/17/2007	F7-0-0.5	0-0.5	0.17	0.22	0.23	0.19	0.26	0.24
G8	4/24/2007	G8-0-0.5	0-0.5	0.16	0.22	0.24	0.18 J	0.21	0.22
J4	4/24/2007	J4-0-0.5	0-0.5	0.077	0.10	0.13	0.088 J	0.097	0.10
J6	4/24/2007	J6-0-0.5	0-0.5	0.21	0.27	0.27 D	0.23 DJ	0.26	0.28
K-1.5	4/18/2007	K1.5-0-0.5	0-0.5	0.047	0.046	0.052	0.037	0.043	0.072
K2	4/15/2007	K2-0-0.5	0-0.5	0.045	0.050	0.052	0.040	0.053	0.056
K2	4/15/2007	K2-0-0.5-1.0	0.5-1	0.14 D	0.13	0.14 D	0.096 D	0.11	0.17 D
K2	4/15/2007	K2-0-1.0-1.9	1-1.9	0.070	0.051	0.057	0.043	0.039	0.093
K2	4/14/2007	K2-2.0-4.0	2-4	0.53 D	0.58 D	0.52 D	0.37 D	0.43 D	0.78 D
K2	4/14/2007	K2-4.0-6.0	4-6	0.11 J	0.14 J	0.11 J	0.098	0.087	0.14 J
K2	4/14/2007	DUP-008	4-6	0.075 J	0.092	0.073 J	0.065	0.066	0.099 J
K2	4/14/2007	K2-6.0-8.0	6-8	0.044	0.045	0.055 XJ	0.022	0.051 XJ	0.046
K2	4/14/2007	K2-8.0-10.0	8-10	0.0070 J	0.0062 J	0.0071 J	0.0039 J	0.0045 J	0.0076 J
K2	4/14/2007	K2-10.0-12.0	10-12	0.0012 J	0.0011 J	0.0015 J	0.0011 J	0.00085 J	0.0017 J
K2	4/14/2007	K2-12.0-14.0	12-14	0.00076 J	0.00058 J	0.0011 J	0.0011 J	0.00050 J	0.0012 J
K2	4/14/2007	K2-14.0-14.8	14-14.8	0.00093 J	0.00062 J	0.00092 J	0.00079 J	0.00055 J	0.0016 J
L3	4/18/2007	L3-0-0.5	0-0.5	0.093	0.14	0.20	0.13	0.14	0.17
M-1.5	4/18/2007	M1.5-0-0.5	0-0.5	0.13	0.15	0.17	0.14	0.17	0.22
N.5-1.5	4/15/2007	N.5-1.5-0-0.5	0-0.5	0.14	0.15	0.18	0.13	0.14	0.18
N.5-1.5	4/15/2007	N.5-1.5-0.5-1.0	0.5-1	0.061	0.067	0.079	0.058	0.069	0.087
N.5-1.5	4/15/2007	N.5-1.5-1.0-1.9	1-1.9	0.21 D	0.23 D	0.30 D	0.20 D	0.21 D	0.29 D
N.5-1.5	4/15/2007	N.5-1.5-2-4	2-4	0.042	0.043	0.054	0.033	0.038	0.059
N.5-1.5	4/15/2007	N.5-1.5-4-6	4-6	0.060	0.057	0.062	0.043	0.062	0.086
N.5-1.5	4/15/2007	N.5-1.5-6-8	6-8	0.038	0.035	0.038	0.024	0.036	0.052
N.5-1.5	4/15/2007	N.5-1.5-8-10	8-10	0.0011 J	0.00096 J	0.011 U	0.0010 J	0.00098 J	0.0012 J
N.5-1.5	4/15/2007	N.5-1.5-10-12	10-12	0.0011 J	0.00072 J	0.013 U	0.0012 J	0.00083 J	0.0012 J
N.5-1.5	4/15/2007	N.5-1.5-12-14	12-14	0.0013 J	0.0012 J	0.012 U	0.0034 J	0.0013 J	0.0034 J
N.5-1.5	4/15/2007	DUP-011	12-14	0.0010 J	0.00082 J	0.012 U	0.0034 J	0.0012 J	0.0038 J
N.5-1.5	4/15/2007	N.5-1.5-14-16	14-16	0.00053 J	0.00038 J	0.011 U	0.00089 J	0.011 U	0.0012 J
N.5-1.5	4/15/2007	N.5-1.5-16-16.4	16-16.4	0.0022 J	0.0014 J	0.011 U	0.0020 J	0.0011 J	0.0027 J
N-1.5	4/18/2007	N1.5-0-0.5	0-0.5	0.15	0.20	0.26	0.19	0.20	0.26
N3	4/18/2007	N3-0-0.5	0-0.5	0.053	0.067	0.11 J	0.061	0.057	0.083
O1	4/16/2007	O1-0-0.5	0-0.5	0.39 D	0.17	0.30	0.046	0.16	0.56 D
P.5-1	4/16/2007	P.5-1-0-0.5	0-0.5	0.13	0.12	0.16	0.085	0.10	0.17

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Table B-16
Sediment PAH Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval	Benzo(a)anthracene (mg/kg)	Benzo(a)pyrene (mg/kg)	Benzo(b)fluoranthene (mg/kg)	Benzo(g,h,i)perylene (mg/kg)	Benzo(k)fluoranthene (mg/kg)	Chrysene (mg/kg)
P.5-1.5	4/15/2007	P.5-1.5-0-0.5	0-0.5	0.11	0.12	0.14	0.092	0.10	0.14
P.5-1.5	4/15/2007	P.5-1.5-0.5-1.0	0.5-1	0.16	0.16	0.20 D	0.12	0.16	0.22
P.5-1.5	4/15/2007	P.5-1.5-1.0-2.0	1-2	0.041	0.045	0.043	0.034	0.047	0.054
P.5-1.5	4/15/2007	P.5-1.5-2-4	2-4	0.17	0.14	0.20	0.092	0.12	0.24
P.5-1.5	4/15/2007	P.5-1.5-4-6	4-6	0.14	0.098	0.12	0.067	0.082	0.18
P.5-1.5	4/15/2007	P.5-1.5-6-8	6-8	0.19	0.15	0.12 D	0.080	0.092 D	0.24
P.5-1.5	4/15/2007	P.5-1.5-8-10	8-10	0.19	0.21	0.11 D	0.12	0.078 D	0.22
P.5-1.5	4/15/2007	P.5-1.5-10-12	10-12	0.016	0.015	0.018	0.011 J	0.011 J	0.022
P.5-1.5	4/15/2007	P.5-1.5-12-14	12-14	0.0017 J	0.0014 J	0.0022 J	0.0012 J	0.0012 J	0.0021 J
P.5-1.5	4/15/2007	P.5-1.5-14-16	14-16	0.0015 J	0.0011 J	0.0021 J	0.0012 J	0.0012 J	0.0019 J
P.5-1.5	4/15/2007	P.5-1.5-16-16.7	16-16.7	0.0011 J	0.00066 J	0.0014 J	0.00069 J	0.00068 J	0.0013 J
P-1.5	4/16/2007	P1.5-0-0.5	0-0.5	0.25	0.21	0.26	0.14	0.23	0.31 D
R-1.5	4/18/2007	R1.5-0-0.5	0-0.5	0.16	0.20	0.23	0.16	0.22	0.27
SD-A	10/10/2007	SD-A 0-0.5	0-0.5	0.10 D	0.10 D	0.095 D	0.061 D	0.097 D	0.12 D
SD-A	10/10/2007	SD-F 0-0.5	0-0.5	0.50 D	0.43 D	0.40 D	0.18 Dj	0.38 D	0.50 D
SD-B	10/8/2007	SD-B 0-0.75	0-0.75	0.019	0.016	0.015	0.0089 J	0.015	0.019
SD-C	10/8/2007	SD-C 0-0.7	0-0.7	0.0095	0.0069	0.0070	0.0031 J	0.0069	0.0085
SD-D	10/8/2007	SD-D 0-0.6	0-0.6	0.11 D	0.11 D	0.12 D	0.046 J	0.11 D	0.12 D
SD-E	10/8/2007	SD-E 0-0.5	0-0.5	4.0 D	3.4 D	2.8 D	1.2 JD	3.0 D	3.5 D
SD-E	10/8/2007	SD-E 0.5-1	0.5-1	0.36 D	0.34 D	0.31 D	0.17 DJ	0.33 D	0.39 D
SD-E	10/8/2007	SD-E 1-1.8	1-1.8	0.43 D	0.43 D	0.40 D	0.20 DJ	0.37 D	0.46 D
Goose Lake									
GL-SDC-3	4/25/2007	GLSDC03-0-0.5	0-0.5	0.17	0.23	0.22	0.21	0.22	0.22
GL-SDC-3	4/25/2007	GLSDC03-0.5-1.0	0.5-1	0.15	0.19	0.21	0.16	0.18	0.21
GL-SDC-3	4/25/2007	GLSDC03-1.0-2.0	1-2	0.25	0.24 D	0.25	0.22	0.22 D	0.29 D
GL-SDC-3	4/25/2007	GLSDC-03-2-4	2-4	0.10	0.14	0.14	0.14	0.15	0.13
GL-SDC-3	4/25/2007	DUP-018	2-4	0.28 D	0.30 D	0.27 D	0.25	0.30 D	0.34 D
GL-SDC-3	4/25/2007	GLSDC-03-4-6	4-6	0.0050 J	0.0052 J	0.0068 J	0.0077 J	0.0049 J	0.0087 J
GL-SDC-3	4/25/2007	GLSDC-03-6-8	6-8	0.0015 J	0.0016 J	0.0029 J	0.0054 J	0.0017 J	0.0050 J
GL-SDC-3	4/25/2007	GLSDC-03-8-10	8-10	0.0013 J	0.0014 J	0.0024 J	0.0038 J	0.0015 J	0.0034 J
GL-SDC-3	4/25/2007	GLSDC-031011.6	10-11.6	0.0023 J	0.0025 J	0.0045 J	0.0078 J	0.0033 J	0.0061 J
GL-SDT-1	4/25/2007	GLSDT-01-0-0.5	0-0.5	0.13	0.17	0.19	0.17	0.16	0.16
GL-SDT-2	4/25/2007	GLSDT-02-0-0.5	0-0.5	0.15	0.20	0.20	0.19	0.20	0.19
GL-SDT-3	4/25/2007	GLSDT-03-0-0.5	0-0.5	0.18	0.23	0.24	0.20	0.23	0.24
GL-SDT-4	4/25/2007	GLSDT-04-0-0.5	0-0.5	0.23	0.43 D	0.41 D	0.38 D	0.39 D	0.42 D
GL-SDT-5	4/25/2007	GLSDT-05-0-0.5	0-0.5	0.083	0.12	0.15	0.12	0.10	0.11

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Sediment PAH Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval	Dibenz(a,h)anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(1,2,3-cd)pyrene (mg/kg)	Naphthalene (mg/kg)	Phenanthrene (mg/kg)	Pyrene (mg/kg)	Total PAHs (mg/kg)
DePue Lake											
D5	4/18/2007	D5-0-0.5	0-0.5	0.042	0.24	0.014 J	0.17	0.014 J	0.077	0.27	2.0
D7	4/17/2007	D7-0-0.5	0-0.5	0.052	0.34	0.016 J	0.22	0.014 J	0.11	0.37	2.7
D9	4/17/2007	D9-0-0.5	0-0.5	0.074	0.53	0.022 J	0.29	0.014 J	0.19	0.52	4.2
F7	4/17/2007	F7-0-0.5	0-0.5	0.046	0.32	0.017	0.20	0.012 J	0.10	0.34	2.5
G8	4/24/2007	G8-0-0.5	0-0.5	0.051	0.30	0.014 J	0.20	0.021 UJ	0.097	0.30	2.3
J4	4/24/2007	J4-0-0.5	0-0.5	0.025	0.16	0.0082 J	0.098	0.024 U	0.046	0.15	1.1
J6	4/24/2007	J6-0-0.5	0-0.5	0.067 D	0.34 D	0.021	0.25 D	0.018 UJ	0.12	0.35 D	2.8
K-1.5	4/18/2007	K1.5-0-0.5	0-0.5	0.0094 J	0.13	0.0090 J	0.037	0.0061 J	0.080	0.13	0.74
K2	4/15/2007	K2-0-0.5	0-0.5	0.012 J	0.091	0.0052 J	0.044	0.014 U	0.035	0.085	0.60
K2	4/15/2007	K2-0-0.5-1.0	0.5-1	0.032	0.28 D	0.027 D	0.096 D	0.013 U	0.15	0.29 D	1.8
K2	4/15/2007	K2-0-1.0-1.9	1-1.9	0.013 J	0.18	0.016	0.037	0.014 U	0.053	0.19	0.89
K2	4/14/2007	K2-2.0-4.0	2-4	0.099	1.0 D	0.082	0.35 D	0.019	0.37 D	1.1 D	6.7
K2	4/14/2007	K2-4.0-6.0	4-6	0.020	0.41 D	0.079	0.088 J	0.0049 J	0.63 D	0.41 D	2.6
K2	4/14/2007	DUP-008	4-6	0.015	0.30 D	0.064	0.058 J	0.0039 J	0.46 D	0.30 D	1.8
K2	4/14/2007	K2-6.0-8.0	6-8	0.0043 J	0.14 J	0.011 J	0.023	0.0010 J	0.14 J	0.12 J	0.75
K2	4/14/2007	K2-8.0-10.0	8-10	0.00093 J	0.024	0.0025 J	0.0038 J	0.00053 J	0.024	0.021	0.12
K2	4/14/2007	K2-10.0-12.0	10-12	0.011 U	0.0026 J	0.00076 J	0.00074 J	0.00054 J	0.011 U	0.0026 J	0.015
K2	4/14/2007	K2-12.0-14.0	12-14	0.011 U	0.0015 J	0.00052 J	0.011 U	0.00063 J	0.011 U	0.0015 J	0.0094
K2	4/14/2007	K2-14.0-14.8	14-14.8	0.011 U	0.0019 J	0.00059 J	0.011 U	0.00052 J	0.011 U	0.0019 J	0.010
L3	4/18/2007	L3-0-0.5	0-0.5	0.032	0.25	0.015 J	0.14	0.012 J	0.089	0.25	1.7
M-1.5	4/18/2007	M1.5-0-0.5	0-0.5	0.034	0.31	0.027 J	0.14	0.020 J	0.12	0.31	2.1
N.5-1.5	4/15/2007	N.5-1.5-0-0.5	0-0.5	0.033	0.27	0.023 J	0.14	0.025 U	0.12	0.26	1.9
N.5-1.5	4/15/2007	N.5-1.5-0.5-1.0	0.5-1	0.014 J	0.13	0.015 J	0.060	0.021 U	0.059	0.13	0.88
N.5-1.5	4/15/2007	N.5-1.5-1.0-1.9	1-1.9	0.050 D	0.43 D	0.051 D	0.20 D	0.019 U	0.20 D	0.44 D	3.0
N.5-1.5	4/15/2007	N.5-1.5-2-4	2-4	0.0088 J	0.094	0.014 J	0.033	0.018 UJ	0.047	0.092	0.61
N.5-1.5	4/15/2007	N.5-1.5-4-6	4-6	0.011 J	0.13	0.022	0.042	0.017 U	0.070	0.15	0.87
N.5-1.5	4/15/2007	N.5-1.5-6-8	6-8	0.0069 J	0.083	0.017	0.022	0.016 U	0.053	0.095	0.56
N.5-1.5	4/15/2007	N.5-1.5-8-10	8-10	0.00051 J	0.011 U	0.00057 J	0.00097 J	0.011 U	0.011 U	0.011 U	0.0078
N.5-1.5	4/15/2007	N.5-1.5-10-12	10-12	0.00064 J	0.013 U	0.013 U	0.0010 J	0.013 U	0.013 U	0.013 U	0.0067
N.5-1.5	4/15/2007	N.5-1.5-12-14	12-14	0.00052 J	0.012 U	0.00060 J	0.0014 J	0.012 U	0.012 U	0.012 U	0.013
N.5-1.5	4/15/2007	DUP-011	12-14	0.012 U	0.012 U	0.00099 J	0.0010 J	0.012 U	0.012 U	0.012 U	0.014
N.5-1.5	4/15/2007	N.5-1.5-14-16	14-16	0.011 U	0.011 U	0.00056 J	0.011 U	0.011 U	0.011 U	0.011 U	0.0036
N.5-1.5	4/15/2007	N.5-1.5-16-16.4	16-16.4	0.011 U	0.011 U	0.00068 J	0.00081 J	0.011 U	0.011 U	0.011 U	0.014
N-1.5	4/18/2007	N1.5-0-0.5	0-0.5	0.052 J	0.36	0.037 J	0.20	0.024 J	0.16	0.37	2.6
N3	4/18/2007	N3-0-0.5	0-0.5	0.015 J	0.13	0.0079 J	0.065	0.0053 J	0.051	0.12	0.87
O1	4/16/2007	O1-0-0.5	0-0.5	0.028	1.2 D	2.7 D	0.048	2.8 D	5.2 D	0.95 D	23
P.5-1	4/16/2007	P.5-1-0-0.5	0-0.5	0.025	0.25	0.033	0.085	0.016 J	0.13	0.26 D	1.7

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Location ID	Date Collected	Sample Name	Depth Interval	Dibenz(a,h)anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(1,2,3-cd)pyrene (mg/kg)	Naphthalene (mg/kg)	Phenanthrene (mg/kg)	Pyrene (mg/kg)	Total PAHs (mg/kg)
P.5-1.5	4/15/2007	P.5-1.5-0-0.5	0-0.5	0.026	0.23	0.020	0.10	0.017 U	0.13	0.23	1.5
P.5-1.5	4/15/2007	P.5-1.5-0.5-1.0	0.5-1	0.036	0.40 D	0.017	0.13	0.022	0.23	0.37 D	2.3
P.5-1.5	4/15/2007	P.5-1.5-1.0-2.0	1-2	0.0097 J	0.084	0.010 J	0.035	0.017 U	0.037	0.11	0.60
P.5-1.5	4/15/2007	P.5-1.5-2-4	2-4	0.023 J	0.32	0.058	0.085	0.026 J	0.18	0.44	2.3
P.5-1.5	4/15/2007	P.5-1.5-4-6	4-6	0.021 J	0.31	0.045	0.063	0.015 U	0.14	0.33	1.7
P.5-1.5	4/15/2007	P.5-1.5-6-8	6-8	0.027	0.29 D	0.053	0.081	0.0090 J	0.17	0.31 D	2.0
P.5-1.5	4/15/2007	P.5-1.5-8-10	8-10	0.030	0.18 D	0.027	0.12	0.0068 J	0.11	0.21 D	1.8
P.5-1.5	4/15/2007	P.5-1.5-10-12	10-12	0.0028 J	0.038	0.0051 J	0.010 J	0.0016 J	0.020	0.040	0.23
P.5-1.5	4/15/2007	P.5-1.5-12-14	12-14	0.012 U	0.0033 J	0.00097 J	0.0012 J	0.00059 J	0.012 U	0.0032 J	0.020
P.5-1.5	4/15/2007	P.5-1.5-14-16	14-16	0.013 U	0.0030 J	0.00070 J	0.0011 J	0.00059 J	0.013 U	0.0027 J	0.018
P.5-1.5	4/15/2007	P.5-1.5-16-16.7	16-16.7	0.011 U	0.0022 J	0.00057 J	0.00063 J	0.00041 J	0.011 U	0.0019 J	0.012
P-1.5	4/16/2007	P1.5-0-0.5	0-0.5	0.043	0.54 D	0.070	0.14	0.051	0.29 D	0.55 D	3.3
R-1.5	4/18/2007	R1.5-0-0.5	0-0.5	0.045	0.32 D	0.042	0.16	0.022	0.17	0.32 D	2.5
SD-A	10/10/2007	SD-A 0-0.5	0-0.5	0.028 J	0.26 D	0.023 J	0.060 D	0.014	0.21 D	0.24 D	1.5
SD-A	10/10/2007	SD-F 0-0.5	0-0.5	0.050	1.3 D	0.033	0.22 D	0.0070	0.53 D	1.0 D	5.8
SD-B	10/8/2007	SD-B 0-0.75	0-0.75	0.0028 J	0.053	0.0023 J	0.010	0.0012 J	0.023	0.044	0.24
SD-C	10/8/2007	SD-C 0-0.7	0-0.7	0.0012 J	0.021	0.00090 J	0.0041 J	0.0055 U	0.0099	0.017	0.10
SD-D	10/8/2007	SD-D 0-0.6	0-0.6	0.017	0.29 D	0.016	0.057	0.011	0.19 D	0.28 D	1.6
SD-E	10/8/2007	SD-E 0-0.5	0-0.5	0.55 JD	11 D	2.2 D	1.7 D	2.1 D	14 D	8.5 D	65
SD-E	10/8/2007	SD-E 0.5-1	0.5-1	0.076	0.87 D	0.068	0.20 D	0.045	0.66 D	0.72 D	4.9
SD-E	10/8/2007	SD-E 1-1.8	1-1.8	0.051	0.86 D	0.035	0.22 D	0.024	0.53 D	0.93 D	5.2
Goose Lake											
GL-SDC-3	4/25/2007	GLSDC03-0-0.5	0-0.5	0.059	0.26	0.016 J	0.23	0.018 J	0.084	0.25 D	2.3
GL-SDC-3	4/25/2007	GLSDC03-0.5-1.0	0.5-1	0.048	0.26	0.029	0.18	0.016 J	0.095	0.34 D	2.2
GL-SDC-3	4/25/2007	GLSDC03-1.0-2.0	1-2	0.070	0.35 D	0.038	0.24	0.022 J	0.11	0.48 D	3.0
GL-SDC-3	4/25/2007	GLSDC-03-2-4	2-4	0.038	0.17	0.011 J	0.15	0.010 J	0.052	0.21	1.5
GL-SDC-3	4/25/2007	DUP-018	2-4	0.085	0.41 D	0.039 J	0.24 D	0.022 J	0.11	0.53 D	3.5
GL-SDC-3	4/25/2007	GLSDC-03-4-6	4-6	0.0014 J	0.011	0.0015 J	0.0049 J	0.011 UJ	0.011 U	0.013	0.076
GL-SDC-3	4/25/2007	GLSDC-03-6-8	6-8	0.00050 J	0.0076 J	0.0023 J	0.0019 J	0.012 UJ	0.012 U	0.0078 J	0.039
GL-SDC-3	4/25/2007	GLSDC-03-8-10	8-10	0.014 U	0.0046 J	0.0018 J	0.0016 J	0.014 UJ	0.014 U	0.0047 J	0.027
GL-SDC-3	4/25/2007	GLSDC-031011.6	10-11.6	0.00073 J	0.011 J	0.0047 J	0.0033 J	0.015 UJ	0.015 U	0.0098 J	0.063
GL-SDT-1	4/25/2007	GLSDT-01-0-0.5	0-0.5	0.045	0.22	0.014 J	0.18	0.012 J	0.065	0.26	1.9
GL-SDT-2	4/25/2007	GLSDT-02-0-0.5	0-0.5	0.052	0.25	0.014 J	0.21	0.015 J	0.076	0.29 J	2.1
GL-SDT-3	4/25/2007	GLSDT-03-0-0.5	0-0.5	0.060	0.30 D	0.021	0.23	0.016 J	0.084	0.45 D	2.6
GL-SDT-4	4/25/2007	GLSDT-04-0-0.5	0-0.5	0.083	0.52 D	0.023	0.42 D	0.026 J	0.11	0.64 D	4.3
GL-SDT-5	4/25/2007	GLSDT-05-0-0.5	0-0.5	0.033	0.14	0.010 J	0.13	0.0093 J	0.046	0.18	1.3

Notes:
Concentrations are reported on a dry-weight basis.
Non-detect values reported at the reporting limit.
mg/kg - milligrams per kilogram
D - Sample re-analyzed at higher dilution factor.
J - estimated value
JD - Estimated value. Sample re-analyzed at higher dilution factor.
U - The analyte was analyzed for, but not detected.
UJ - The analyte was analyzed for, but not detected. Detection limit is estimated.
XJ - Estimated value. Compound could not be chromatographically resolved.

Table B-17
Sediment Pesticides/Herbicides Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval	4,4'-DDD (µg/kg)	4,4'-DDE (µg/kg)	4,4'-DDT (µg/kg)	Aldrin (µg/kg)	Alpha-BHC (µg/kg)	Alpha-Chlordane (µg/kg)	Beta-BHC (µg/kg)	Delta-BHC (µg/kg)	Dieldrin (µg/kg)	Endosulfan I (µg/kg)
DePue Lake													
D5	4/18/2007	D5-0-0.5	0-0.5	3.6 U	6.6	3.6 U	1.8 U	0.77 J	1.8 U	2.2	0.85 J	3.6 U	1.8 U
D7	4/17/2007	D7-0-0.5	0-0.5	2.2 J	5.3	3.9 U	2.0 U	2.0 U	1.7 J	1.0 U	2.0 U	4.1 J	2.0 U
D9	4/17/2007	D9-0-0.5	0-0.5	1.1 J	2.7 J	2.9 U	1.5 JN	1.5 U	1.5 U	0.75 U	1.5 U	1.5 J	1.5 U
F7	4/17/2007	F7-0-0.5	0-0.5	3.8 U	8.1 J	4.0 J	2.0 J	1.9 U	2.6	3.7 J	1.9 U	3.5 J	1.9 U
G8	4/24/2007	G8-0-0.5	0-0.5	4.1 U	11 JN	4.1 U	2.1 U	2.1 U	2.1 U	2.6 J	2.1 UJ	4.1 U	2.1 U
J4	4/24/2007	J4-0-0.5	0-0.5	4.7 U	11 J	4.7 U	2.4 U	2.4 U	2.4 U	4.1 J	2.4 UJ	4.7 U	2.4 U
J6	4/24/2007	J6-0-0.5	0-0.5	3.4 U	11 J	3.4 U	1.8 U	1.8 U	1.8 U	1.8 J	1.8 UJ	3.4 U	1.8 U
K-1.5	4/18/2007	K1.5-0-0.5	0-0.5	2.3 U	2.9	2.3 U	1.2 U	1.2 U	1.2 U	0.59 U	1.2 U	2.3 U	1.2 U
K2	4/15/2007	K2-0-0.5	0-0.5	0.73 J	2.2 J	5.7 U	2.9 U	0.98 J	2.9 U	1.5 U	12	1.4 J	2.9 U
K2	4/15/2007	K2-0-0.5-1.0	0.5-1	0.93 J	4.3 J	1.8 J	2.7 U	0.37 J	2.0 J	3.9 JN	9.9 JN	1.3 J	2.7 U
K2	4/15/2007	K2-0-1.0-1.9	1-1.9	5.7 U	1.7 J	5.7 UJ	2.9 U	0.69 J	2.9 U	1.5 U	15 JN	5.7 U	2.9 U
K2	4/14/2007	K2-2.0-4.0	2-4	1.6 J	4.4	2.7 U	2.0 J	1.4 U	1.4 U	3.4 J	1.4 U	3.7 J	1.4 U
K2	4/14/2007	K2-4.0-6.0	4-6	2.6 U	2.6 U	2.6 U	1.3 U	1.3 U	1.3 U	0.66 U	1.3 U	2.6 U	1.3 U
K2	4/14/2007	DUP-008	4-6	2.6 U	2.6 U	2.6 U	1.3 U	1.3 U	1.3 U	1.2 JN	1.3 U	2.6 U	1.3 U
K2	4/14/2007	K2-6.0-8.0	6-8	2.5 U	2.5 U	2.5 U	1.3 U	1.3 U	1.3 U	0.82 J	1.3 U	2.5 U	1.3 U
K2	4/14/2007	K2-8.0-10.0	8-10	2.4 U	2.4 U	2.4 U	1.2 U	1.2 U	1.2 U	0.61 U	1.2 U	2.4 U	1.2 U
K2	4/14/2007	K2-10.0-12.0	10-12	2.1 U	2.1 U	2.1 U	1.1 U	1.1 U	1.1 U	0.55 U	1.1 U	2.1 U	1.1 U
K2	4/14/2007	K2-12.0-14.0	12-14	2.1 U	2.1 U	2.1 U	1.1 U	1.1 U	1.1 U	0.55 U	1.1 U	2.1 U	1.1 U
K2	4/14/2007	K2-14.0-14.8	14-14.8	2.1 U	2.1 U	2.1 U	1.1 U	1.1 U	1.1 U	0.55 U	1.1 U	2.1 U	1.1 U
L3	4/18/2007	L3-0-0.5	0-0.5	2.3 J	4.7 J	5.3 U	2.7 U	2.7 U	2.7 U	2.4	1.3 J	5.3 U	2.7 U
M-1.5	4/18/2007	M1.5-0-0.5	0-0.5	2.8 J	5.1 J	5.7 U	2.9 U	2.9 U	2.9 U	3.5	2.9 U	5.7 U	2.9 U
N.5-1.5	4/15/2007	N.5-1.5-0-0.5	0-0.5	10 U	2.2 J	10 UJ	5.2 U	6.7 JN	5.2 U	2.6 U	17 JN	10 U	5.2 U
N.5-1.5	4/15/2007	N.5-1.5-0.5-1.0	0.5-1	8.5 U	8.5 U	1.6 J	4.4 U	9.4 JN	4.4 U	2.2 U	24 JN	11 JN	4.4 U
N.5-1.5	4/15/2007	N.5-1.5-1.0-1.9	1-1.9	0.99 J	3.8 J	3.0 J	3.7 J	3.9 U	3.9 U	3.1 JN	3.9 U	7.5 U	3.9 U
N.5-1.5	4/15/2007	N.5-1.5-2-4	2-4	7.3 U	4.0 J	11 JN	0.69 J	3.8 U	3.8 U	1.9 U	3.8 U	7.3 U	3.8 U
N.5-1.5	4/15/2007	N.5-1.5-4-6	4-6	1.5 J	4.7 J	2.5 J	1.2 J	0.54 J	0.57 J	1.7 U	3.5 UJ	6.7 U	3.5 U
N.5-1.5	4/15/2007	N.5-1.5-6-8	6-8	6.2 U	3.4 J	6.2 UJ	3.2 U	3.2 U	3.2 U	4.0 JN	3.8	6.2 U	3.2 U
N.5-1.5	4/15/2007	N.5-1.5-8-10	8-10	4.3 U	4.3 U	4.3 UJ	2.2 U	2.2 U	2.2 U	1.1 U	2.2 U	4.3 U	2.2 U
N.5-1.5	4/15/2007	N.5-1.5-10-12	10-12	5.2 U	5.2 U	5.2 UJ	2.7 U	2.7 U	2.7 U	1.3 U	2.7 UJ	5.2 U	2.7 U
N.5-1.5	4/15/2007	N.5-1.5-12-14	12-14	4.7 U	4.7 U	4.7 UJ	2.4 U	2.4 U	2.4 U	1.2 U	2.4 U	4.7 U	2.4 U
N.5-1.5	4/15/2007	DUP-011	12-14	4.7 U	4.7 U	4.7 UJ	2.4 U	2.4 U	2.4 U	1.2 U	2.4 U	4.7 U	2.4 U
N.5-1.5	4/15/2007	N.5-1.5-14-16	14-16	4.3 U	4.3 U	4.3 UJ	2.2 U	2.2 U	2.2 U	1.1 U	2.2 U	4.3 U	2.2 U
N.5-1.5	4/15/2007	N.5-1.5-16-16.4	16-16.4	4.2 U	4.2 U	4.2 UJ	2.2 U	2.2 U	2.2 U	1.1 U	4.4 JN	4.2 U	2.2 U

See Notes on Page 6.

Table B-17
Sediment Pesticides/Herbicides Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval	4,4'-DDD (µg/kg)	4,4'-DDE (µg/kg)	4,4'-DDT (µg/kg)	Aldrin (µg/kg)	Alpha-BHC (µg/kg)	Alpha-Chlordane (µg/kg)	Beta-BHC (µg/kg)	Delta-BHC (µg/kg)	Dieldrin (µg/kg)	Endosulfan I (µg/kg)
N-1.5	4/18/2007	N1.5-0-0.5	0-0.5	2.3 J	5.5	5.3 U	2.7 U	2.7 U	2.7 U	2.7	2.7 U	5.3 U	2.7 U
N3	4/18/2007	N3-0-0.5	0-0.5	23 J	2.6 J	3.4 J	1.8 U	1.8 U	1.8 U	2.4	R	6.1 JN	1.8 U
O1	4/16/2007	O1-0-0.5	0-0.5	4.5 U	11 J	10	2.3 U	2.3 U	2.3 U	3.4 J	14 JN	5.1	5.2 J
P.5-1	4/16/2007	P.5-1-0-0.5	0-0.5	2.0 J	2.5 J	2.1 J	1.7 U	1.7 U	1.7 U	1.5	1.7 U	3.5 J	1.7 U
P.5-1.5	4/15/2007	P.5-1.5-0-0.5	0-0.5	6.7 U	4.0 J	1.8 J	1.2 J	3.5 U	3.5 U	1.7 U	3.5 U	3.0 J	3.5 U
P.5-1.5	4/15/2007	P.5-1.5-0.5-1.0	0.5-1	6.6 U	6.9 J	3.5 J	3.4 U	1.1 J	3.4 U	0.94 J	3.4 U	6.6 U	3.4 U
P.5-1.5	4/15/2007	P.5-1.5-1.0-2.0	1-2	6.6 U	4.2 J	9.3 JN	0.98 J	3.4 U	3.4 U	1.7 U	3.4 U	6.6 U	3.4 U
P.5-1.5	4/15/2007	P.5-1.5-2-4	2-4	5.0 J	19	11 J	3.5 JN	2.3 J	3.5 U	3.5 J	3.5 U	6.7 U	3.5 U
P.5-1.5	4/15/2007	P.5-1.5-4-6	4-6	3.1 J	8.4	5.7 J	3.1 U	3.1 J	3.1 U	4.3 JN	4.5 JN	6.1 U	3.1 U
P.5-1.5	4/15/2007	P.5-1.5-6-8	6-8	3.1 U	1.8 J	3.1 U	1.6 U	0.82 J	1.6 U	0.80 U	1.6 U	3.1 U	1.6 U
P.5-1.5	4/15/2007	P.5-1.5-8-10	8-10	3.0 U	3.0 U	3.0 U	1.5 U	1.5 U	1.5 U	1.4	1.5 U	3.0 U	1.5 U
P.5-1.5	4/15/2007	P.5-1.5-10-12	10-12	2.9 U	2.9 U	2.9 U	1.5 U	1.5 U	1.5 U	0.75 U	1.5 U	2.9 U	1.5 U
P.5-1.5	4/15/2007	P.5-1.5-12-14	12-14	2.4 U	2.4 U	2.4 U	1.3 U	1.3 U	1.3 U	0.63 U	1.3 U	2.4 U	1.3 U
P.5-1.5	4/15/2007	P.5-1.5-14-16	14-16	2.5 U	2.5 U	2.5 U	1.3 U	1.3 U	1.3 U	0.65 U	1.3 U	2.5 U	1.3 U
P.5-1.5	4/15/2007	P.5-1.5-16-16.7	16-16.7	2.3 U	2.3 U	2.3 U	1.2 U	1.2 U	1.2 U	0.58 U	1.2 U	2.3 U	1.2 U
P-1.5	4/16/2007	P1.5-0-0.5	0-0.5	3.3 UJ	3.3 UJ	3.3 UJ	1.7 UJ	1.7 UJ	1.7 UJ	2.0 JN	1.7 UJ	3.3 UJ	1.7 UJ
R-1.5	4/18/2007	R1.5-0-0.5	0-0.5	3.9 U	7.5	3.9 U	3.6 JN	1.6 J	2.0 U	3.9	2.3 JN	3.9 U	2.0 U
SD-A	10/10/2007	SD-A 0-0.5	0-0.5	4.2 J	4.5 J	4.2 UJ	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	4.2 U	2.2 U
SD-A	10/10/2007	SD-F 0-0.5	0-0.5	1.8 J	3.6 J	4.3 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	1.7 J	2.2 U
SD-B	10/8/2007	SD-B 0-0.75	0-0.75	4.4 U	4.4 U	4.4 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	4.4 U	2.3 U
SD-C	10/8/2007	SD-C 0-0.7	0-0.7	4.3 U	4.3 U	4.3 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	4.3 U	2.2 U
SD-D	10/8/2007	SD-D 0-0.6	0-0.6	11 J	15	4.5 U	2.3 U	0.76 J	4.5	R	2.3 U	4.5 U	2.3 U
SD-E	10/8/2007	SD-E 0-0.5	0-0.5	4.3 U	4.3 U	2.2 J	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	4.3 U	2.2 U
SD-E	10/8/2007	SD-E 0.5-1	0.5-1	5.0 J	7.6 JN	4.8 U	2.5 U	2.5 U	2.7	2.5 U	0.60 J	4.8 U	2.5 U
SD-E	10/8/2007	SD-E 1-1.8	1-1.8	17	13 J	4.6 U	2.4 U	2.4 U	1.0 J	2.4 U	0.48 J	4.6 U	2.4 U
Goose Lake													
GL-SDC-3	4/25/2007	GLSDC03-0-0.5	0-0.5	3.8 U	3.4 J	3.0 J	1.9 U	1.9 U	0.60 J	0.58 J	1.9 U	3.8 NJ	1.9 U
GL-SDC-3	4/25/2007	GLSDC03-0.5-1.0	0.5-1	2.7 J	8.9	5.9	1.8 U	1.8 U	0.62 J	1.8 J	1.8 U	5.1 NJ	1.8 U
GL-SDC-3	4/25/2007	GLSDC03-1.0-2.0	1-2	3.4 J	11	6.9	1.8 U	2.2 NJ	1.8 U	2.3 J	1.8 U	5.4 NJ	1.8 U
GL-SDC-3	4/25/2007	GLSDC-03-2-4	2-4	1.8 J	5.2	4.3 J	1.7 U	1.7 U	1.7 U	1.4	1.7 U	3.2 U	1.7 U
GL-SDC-3	4/25/2007	DUP-018	2-4	1.7 J	3.6	3.0 J	1.7 U	1.7 U	1.7 U	1.6	1.7 U	3.3 U	1.7 U
GL-SDC-3	4/25/2007	GLSDC-03-4-6	4-6	2.2 U	2.2 U	2.2 U	1.1 U	1.1 U	1.1 U	0.56 U	1.1 U	2.2 U	1.1 U
GL-SDC-3	4/25/2007	GLSDC-03-6-8	6-8	2.4 U	2.4 U	2.4 U	1.3 U	1.3 U	1.3 U	0.63 U	1.3 U	2.4 U	1.3 U
GL-SDC-3	4/25/2007	GLSDC-03-8-10	8-10	2.8 U	2.8 U	2.8 U	1.4 U	1.4 U	1.4 U	0.71 U	1.4 U	2.8 U	1.4 U
GL-SDC-3	4/25/2007	GLSDC-031011.6	10-11.6	3.1 U	3.1 U	3.1 U	1.6 U	0.53 J	1.6 U	0.79 U	1.6 U	3.1 U	1.6 U
GL-SDT-1	4/25/2007	GLSDT-01-0-0.5	0-0.5	2.9 U	2.8 J	2.8 J	2.0 U	2.0 U	2.0 U	1.4	2.0 U	2.5 J	2.0 U
GL-SDT-2	4/25/2007	GLSDT-02-0-0.5	0-0.5	3.8 U	2.3 J	2.7 J	1.9 U	1.9 U	0.46 J	0.97 U	1.9 U	2.0 J	1.9 U
GL-SDT-3	4/25/2007	GLSDT-03-0-0.5	0-0.5	3.6 U	7.2	6.2	1.8 U	1.8 U	0.71 J	1.9	1.8 U	3.9 J	1.8 U
GL-SDT-4	4/25/2007	GLSDT-04-0-0.5	0-0.5	3.3 U	3.8	3.4	1.7 U	1.7 U	0.69 J	1.2	1.7 U	3.4 J	1.7 U
GL-SDT-5	4/25/2007	GLSDT-05-0-0.5	0-0.5	4.2 U	2.8 J	3.3 J	2.2 U	2.2 U	0.55 J	0.97 J	2.2 U	2.5 J	2.2 U

See Notes on Page 6.

Table B-17
Sediment Pesticides/Herbicides Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval	Endosulfan II (µg/kg)	Endosulfan sulfate (µg/kg)	Endrin (µg/kg)	Endrin aldehyde (µg/kg)	Endrin ketone (µg/kg)	gamma-BHC (Lindane) (µg/kg)	gamma-Chlordane (µg/kg)
DePue Lake										
D5	4/18/2007	D5-0-0.5	0-0.5	3.6 U	3.6 U	3.6 U	2.7 J	3.6 U	1.8 U	11 JN
D7	4/17/2007	D7-0-0.5	0-0.5	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	2.0 U	9.0 J
D9	4/17/2007	D9-0-0.5	0-0.5	2.9 U	2.9 U	2.9 U	2.9 U	2.9 U	1.5 U	8.5 J
F7	4/17/2007	F7-0-0.5	0-0.5	3.8 U	3.8 U	1.7 J	3.8 U	3.8 U	1.9 U	12 J
G8	4/24/2007	G8-0-0.5	0-0.5	4.1 U	4.1 UJ	4.1 U	4.1 U	4.1 U	2.1 U	2.1 U
J4	4/24/2007	J4-0-0.5	0-0.5	4.7 U	4.7 UJ	4.7 U	3.8 J	4.7 U	2.4 U	12 JN
J6	4/24/2007	J6-0-0.5	0-0.5	3.4 U	3.4 UJ	3.4 U	1.7 J	3.4 U	1.8 UJ	1.8 U
K-1.5	4/18/2007	K1.5-0-0.5	0-0.5	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	1.2 U	6.5 JN
K2	4/15/2007	K2-0-0.5	0-0.5	5.7 U	5.7 U	5.7 U	5.7 U	5.7 U	4.9 J	2.4 JN
K2	4/15/2007	K2-0-0.5-1.0	0.5-1	5.3 U	5.3 U	5.3 U	5.3 U	5.3 U	0.60 J	1.2 J
K2	4/15/2007	K2-0-1.0-1.9	1-1.9	5.7 U	5.7 U	5.7 U	5.7 U	5.7 U	2.9 U	0.66 J
K2	4/14/2007	K2-2.0-4.0	2-4	2.7 U	2.7 U	4.1 JN	1.4 J	2.7 U	1.4 U	5.2 J
K2	4/14/2007	K2-4.0-6.0	4-6	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	1.3 U	1.3 U
K2	4/14/2007	DUP-008	4-6	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	1.3 U	1.3 U
K2	4/14/2007	K2-6.0-8.0	6-8	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	1.3 UJ	1.3 UJ
K2	4/14/2007	K2-8.0-10.0	8-10	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	1.2 U	1.2 U
K2	4/14/2007	K2-10.0-12.0	10-12	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	1.1 U	1.1 U
K2	4/14/2007	K2-12.0-14.0	12-14	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	1.1 U	1.1 U
K2	4/14/2007	K2-14.0-14.8	14-14.8	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	1.1 U	1.1 U
L3	4/18/2007	L3-0-0.5	0-0.5	5.3 U	5.3 U	5.3 U	2.3 J	5.3 U	2.7 U	11 JN
M-1.5	4/18/2007	M1.5-0-0.5	0-0.5	5.7 U	5.7 U	5.7 U	4.9 J	5.7 U	2.9 U	10 JN
N.5-1.5	4/15/2007	N.5-1.5-0-0.5	0-0.5	10 U	10 U	10 U	10 U	10 U	34 JN	5.2 U
N.5-1.5	4/15/2007	N.5-1.5-0.5-1.0	0.5-1	8.5 U	8.5 U	8.5 U	8.5 U	8.5 U	34 JN	7.1 J
N.5-1.5	4/15/2007	N.5-1.5-1.0-1.9	1-1.9	7.5 U	7.5 U	7.5 U	7.5 U	7.5 U	3.9 U	6.7 JN
N.5-1.5	4/15/2007	N.5-1.5-2-4	2-4	7.3 U	7.3 U	7.3 U	7.3 U	7.3 U	3.8 U	4.8 JN
N.5-1.5	4/15/2007	N.5-1.5-4-6	4-6	6.7 U	6.7 UJ	6.7 U	6.7 UJ	6.7 U	3.5 U	6.0 JN
N.5-1.5	4/15/2007	N.5-1.5-6-8	6-8	6.2 U	6.2 U	6.2 U	6.2 U	6.2 U	3.2 U	0.99 J
N.5-1.5	4/15/2007	N.5-1.5-8-10	8-10	4.3 U	4.3 U	4.3 U	4.3 U	4.3 U	2.2 U	2.2 U
N.5-1.5	4/15/2007	N.5-1.5-10-12	10-12	5.2 U	5.2 UJ	5.2 U	R	5.2 U	2.7 U	2.7 U
N.5-1.5	4/15/2007	N.5-1.5-12-14	12-14	4.7 U	4.7 U	4.7 U	4.7 U	4.7 U	2.4 U	2.4 U
N.5-1.5	4/15/2007	DUP-011	12-14	4.7 U	4.7 U	4.7 U	4.7 U	4.7 UJ	2.4 U	2.4 U
N.5-1.5	4/15/2007	N.5-1.5-14-16	14-16	4.3 U	4.3 U	4.3 U	4.3 U	4.3 U	2.2 U	2.2 U
N.5-1.5	4/15/2007	N.5-1.5-16-16.4	16-16.4	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U	2.2 U	2.2 U

See Notes on Page 6.

Table B-17
Sediment Pesticides/Herbicides Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval	Endosulfan II (µg/kg)	Endosulfan sulfate (µg/kg)	Endrin (µg/kg)	Endrin aldehyde (µg/kg)	Endrin ketone (µg/kg)	gamma-BHC (Lindane) (µg/kg)	gamma-Chlordane (µg/kg)
N-1.5	4/18/2007	N1.5-0-0.5	0-0.5	5.3 U	5.3 U	5.3 U	2.8 J	5.3 U	2.7 U	11 JN
N3	4/18/2007	N3-0-0.5	0-0.5	3.6 U	R	3.6 U	3.7 JN	3.6 U	1.8 UJ	7.7 JN
O1	4/16/2007	O1-0-0.5	0-0.5	12 J	4.5 U	8.2	4.5 U	11 J	4.9 J	2.3 U
P.5-1	4/16/2007	P.5-1-0-0.5	0-0.5	3.2 U	3.2 U	3.2 U	3.2 U	3.2 U	1.7 U	3.3 J
P.5-1.5	4/15/2007	P.5-1.5-0-0.5	0-0.5	6.7 U	6.7 U	6.7 U	6.7 U	6.7 U	3.5 U	3.5 U
P.5-1.5	4/15/2007	P.5-1.5-0.5-1.0	0.5-1	6.6 U	6.6 UJ	6.6 U	6.6 UJ	6.6 U	3.4 U	3.4 U
P.5-1.5	4/15/2007	P.5-1.5-1.0-2.0	1-2	6.6 U	6.6 U	6.6 U	6.6 U	6.6 U	3.4 U	3.6 J
P.5-1.5	4/15/2007	P.5-1.5-2-4	2-4	6.7 U	6.7 U	6.7 U	6.7 U	6.7 UJ	3.5 U	3.5 U
P.5-1.5	4/15/2007	P.5-1.5-4-6	4-6	2.3 J	6.1 U	6.1 U	6.1 U	6.1 UJ	3.1 U	3.1 U
P.5-1.5	4/15/2007	P.5-1.5-6-8	6-8	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	1.6 U	1.6 UJ
P.5-1.5	4/15/2007	P.5-1.5-8-10	8-10	3.0 U	1.7 J	3.0 U	3.0 U	3.0 U	1.5 U	1.5 U
P.5-1.5	4/15/2007	P.5-1.5-10-12	10-12	2.9 U	2.9 U	2.9 U	2.9 U	2.9 U	1.5 U	1.5 U
P.5-1.5	4/15/2007	P.5-1.5-12-14	12-14	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	1.3 U	1.3 U
P.5-1.5	4/15/2007	P.5-1.5-14-16	14-16	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	1.3 U	0.37 J
P.5-1.5	4/15/2007	P.5-1.5-16-16.7	16-16.7	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	1.2 U	0.24 J
P-1.5	4/16/2007	P1.5-0-0.5	0-0.5	3.3 UJ	3.3 UJ	3.3 UJ	3.3 UJ	3.3 UJ	1.7 UJ	1.7 UJ
R-1.5	4/18/2007	R1.5-0-0.5	0-0.5	3.9 U	3.9 U	3.9 U	3.9 J	2.1 J	2.0 U	12 JN
SD-A	10/10/2007	SD-A 0-0.5	0-0.5	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U	2.2 U	1.7 J
SD-A	10/10/2007	SD-F 0-0.5	0-0.5	4.3 U	4.3 U	1.3 J	4.3 U	4.3 U	2.2 U	2.2 U
SD-B	10/8/2007	SD-B 0-0.75	0-0.75	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U	2.3 U	2.3 U
SD-C	10/8/2007	SD-C 0-0.7	0-0.7	4.3 U	4.3 U	4.3 U	4.3 U	4.3 U	2.2 U	2.2 U
SD-D	10/8/2007	SD-D 0-0.6	0-0.6	4.5 U	4.5 U	4.5 U	4.5 U	4.5 U	2.3 U	2.3 U
SD-E	10/8/2007	SD-E 0-0.5	0-0.5	4.3 U	4.3 U	4.3 U	4.3 U	4.3 U	2.2 U	1.9 J
SD-E	10/8/2007	SD-E 0.5-1	0.5-1	4.8 U	4.8 U	4.8 U	4.8 U	2.9 J	2.5 U	5.1 J
SD-E	10/8/2007	SD-E 1-1.8	1-1.8	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	2.4 U	2.4 U
Goose Lake										
GL-SDC-3	4/25/2007	GLSDC03-0-0.5	0-0.5	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	1.9 U	6.7 NJ
GL-SDC-3	4/25/2007	GLSDC03-0.5-1.0	0.5-1	3.4 U	3.4 U	1.6 J	1.8 J	3.4 U	1.8 U	6.0 J
GL-SDC-3	4/25/2007	GLSDC03-1.0-2.0	1-2	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U	1.8 U	4.6 J
GL-SDC-3	4/25/2007	GLSDC-03-2-4	2-4	3.2 U	3.2 U	3.2 U	3.2 U	3.2 U	1.7 U	2.0
GL-SDC-3	4/25/2007	DUP-018	2-4	3.3 U	0.74 J	3.3 U	3.3 U	3.3 U	1.7 U	1.9
GL-SDC-3	4/25/2007	GLSDC-03-4-6	4-6	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	1.1 U	1.1 U
GL-SDC-3	4/25/2007	GLSDC-03-6-8	6-8	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	1.3 U	1.3 U
GL-SDC-3	4/25/2007	GLSDC-03-8-10	8-10	2.8 U	2.8 U	2.8 U	2.8 U	2.8 U	1.4 U	0.28 J
GL-SDC-3	4/25/2007	GLSDC-031011.6	10-11.6	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	1.6 U	1.6 U
GL-SDT-1	4/25/2007	GLSDT-01-0-0.5	0-0.5	1.4 J	3.9 U	3.9 U	3.9 U	3.9 U	2.0 U	5.3 NJ
GL-SDT-2	4/25/2007	GLSDT-02-0-0.5	0-0.5	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	1.9 U	4.2 NJ
GL-SDT-3	4/25/2007	GLSDT-03-0-0.5	0-0.5	3.6 U	3.6 U	3.6 U	3.6 U	3.6 U	1.8 U	7.5 NJ
GL-SDT-4	4/25/2007	GLSDT-04-0-0.5	0-0.5	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U	1.7 U	6.4 NJ
GL-SDT-5	4/25/2007	GLSDT-05-0-0.5	0-0.5	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U	2.2 U	5.1 NJ

See Notes on Page 6.

Table B-17
Sediment Pesticides/Herbicides Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval	Heptachlor (µg/kg)	Heptachlor epoxide (µg/kg)	Methoxychlor (µg/kg)	Toxaphene (µg/kg)
DePue Lake							
D5	4/18/2007	D5-0-0.5	0-0.5	1.8 U	2.2 J	18 U	90 U
D7	4/17/2007	D7-0-0.5	0-0.5	2.0 U	2.0 U	20 U	99 U
D9	4/17/2007	D9-0-0.5	0-0.5	1.5 U	0.79 J	15 U	73 U
F7	4/17/2007	F7-0-0.5	0-0.5	1.9 U	1.7 J	19 U	94 U
G8	4/24/2007	G8-0-0.5	0-0.5	2.1 U	2.1 U	21 U	100 U
J4	4/24/2007	J4-0-0.5	0-0.5	2.0 J	3.6 JN	24 U	120 U
J6	4/24/2007	J6-0-0.5	0-0.5	1.8 U	1.8 U	18 U	86 U
K-1.5	4/18/2007	K1.5-0-0.5	0-0.5	1.2 UJ	0.72 J	12 U	58 U
K2	4/15/2007	K2-0-0.5	0-0.5	2.9 U	2.9 U	29 UJ	140 U
K2	4/15/2007	K2-0-0.5-1.0	0.5-1	0.45 J	2.7 U	27 UJ	130 U
K2	4/15/2007	K2-0-1.0-1.9	1-1.9	12 JN	2.9 U	29 UJ	140 U
K2	4/14/2007	K2-2.0-4.0	2-4	1.4 U	2.2 J	14 U	68 U
K2	4/14/2007	K2-4.0-6.0	4-6	1.3 U	1.3 U	13 U	65 U
K2	4/14/2007	DUP-008	4-6	1.3 U	1.3 U	13 U	66 U
K2	4/14/2007	K2-6.0-8.0	6-8	1.3 U	1.3 U	13 U	62 U
K2	4/14/2007	K2-8.0-10.0	8-10	1.2 U	1.2 U	12 U	59 U
K2	4/14/2007	K2-10.0-12.0	10-12	1.1 U	1.1 U	11 U	53 U
K2	4/14/2007	K2-12.0-14.0	12-14	1.1 U	1.1 U	11 U	53 U
K2	4/14/2007	K2-14.0-14.8	14-14.8	1.1 U	1.1 U	11 U	53 U
L3	4/18/2007	L3-0-0.5	0-0.5	1.9 J	2.7 U	27 U	130 U
M-1.5	4/18/2007	M1.5-0-0.5	0-0.5	2.9 U	2.9 U	29 U	140 U
N.5-1.5	4/15/2007	N.5-1.5-0-0.5	0-0.5	5.2 U	5.2 U	52 UJ	250 U
N.5-1.5	4/15/2007	N.5-1.5-0.5-1.0	0.5-1	4.4 U	4.4 U	44 UJ	210 U
N.5-1.5	4/15/2007	N.5-1.5-1.0-1.9	1-1.9	5.5 JN	3.9 U	39 UJ	190 U
N.5-1.5	4/15/2007	N.5-1.5-2-4	2-4	3.8 U	3.8 U	38 UJ	180 U
N.5-1.5	4/15/2007	N.5-1.5-4-6	4-6	3.5 U	3.5 U	35 UJ	170 U
N.5-1.5	4/15/2007	N.5-1.5-6-8	6-8	15 JN	3.2 U	32 UJ	160 U
N.5-1.5	4/15/2007	N.5-1.5-8-10	8-10	2.2 U	2.2 U	22 UJ	110 U
N.5-1.5	4/15/2007	N.5-1.5-10-12	10-12	2.7 U	2.7 U	27 UJ	130 U
N.5-1.5	4/15/2007	N.5-1.5-12-14	12-14	2.4 U	2.4 U	24 UJ	120 U
N.5-1.5	4/15/2007	DUP-011	12-14	2.4 U	2.4 U	24 UJ	120 U
N.5-1.5	4/15/2007	N.5-1.5-14-16	14-16	2.2 U	2.2 U	22 UJ	110 U
N.5-1.5	4/15/2007	N.5-1.5-16-16.4	16-16.4	2.2 U	2.2 U	22 UJ	110 U

See Notes on Page 6.

Table B-17
Sediment Pesticides/Herbicides Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval	Heptachlor (µg/kg)	Heptachlor epoxide (µg/kg)	Methoxychlor (µg/kg)	Toxaphene (µg/kg)
N-1.5	4/18/2007	N1.5-0-0.5	0-0.5	2.7 U	2.7 U	27 U	130 U
N3	4/18/2007	N3-0-0.5	0-0.5	1.8 U	1.8 J	18 U	90 U
O1	4/16/2007	O1-0-0.5	0-0.5	4.8 J	8.4 J	58 J	110 U
P.5-1	4/16/2007	P.5-1-0-0.5	0-0.5	1.7 U	0.90 J	17 U	81 U
P.5-1.5	4/15/2007	P.5-1.5-0-0.5	0-0.5	3.5 U	3.5 U	35 U	170 U
P.5-1.5	4/15/2007	P.5-1.5-0.5-1.0	0.5-1	0.88 J	3.4 U	34 U	170 U
P.5-1.5	4/15/2007	P.5-1.5-1.0-2.0	1-2	0.49 J	3.4 U	34 U	170 U
P.5-1.5	4/15/2007	P.5-1.5-2-4	2-4	1.4 J	3.5 U	35 UJ	170 U
P.5-1.5	4/15/2007	P.5-1.5-4-6	4-6	3.2	3.1 U	31 UJ	150 U
P.5-1.5	4/15/2007	P.5-1.5-6-8	6-8	0.82 J	1.6 U	16 U	78 U
P.5-1.5	4/15/2007	P.5-1.5-8-10	8-10	1.5 U	1.5 U	15 U	75 U
P.5-1.5	4/15/2007	P.5-1.5-10-12	10-12	1.5 U	1.5 U	15 U	73 U
P.5-1.5	4/15/2007	P.5-1.5-12-14	12-14	1.3 U	1.3 U	13 U	61 U
P.5-1.5	4/15/2007	P.5-1.5-14-16	14-16	1.3 U	1.3 U	13 U	64 U
P.5-1.5	4/15/2007	P.5-1.5-16-16.7	16-16.7	1.2 U	1.2 U	12 U	57 U
P-1.5	4/16/2007	P1.5-0-0.5	0-0.5	1.7 UJ	1.7 UJ	17 UJ	83 UJ
R-1.5	4/18/2007	R1.5-0-0.5	0-0.5	3.1 JN	3.1 J	20 U	99 U
SD-A	10/10/2007	SD-A 0-0.5	0-0.5	2.2 UJ	2.2 U	22 U	220 U
SD-A	10/10/2007	SD-F 0-0.5	0-0.5	2.2 U	2.2 U	22 U	220 U
SD-B	10/8/2007	SD-B 0-0.75	0-0.75	2.3 U	2.3 U	23 U	230 U
SD-C	10/8/2007	SD-C 0-0.7	0-0.7	2.2 U	2.2 U	22 U	220 U
SD-D	10/8/2007	SD-D 0-0.6	0-0.6	2.3 U	2.3 U	23 U	230 U
SD-E	10/8/2007	SD-E 0-0.5	0-0.5	2.2 U	0.63 J	22 U	220 U
SD-E	10/8/2007	SD-E 0.5-1	0.5-1	2.5 U	2.5 U	25 U	250 U
SD-E	10/8/2007	SD-E 1-1.8	1-1.8	2.4 U	2.9	24 U	240 U
Goose Lake							
GL-SDC-3	4/25/2007	GLSDC03-0-0.5	0-0.5	1.9 U	1.9 U	19 U	94 U
GL-SDC-3	4/25/2007	GLSDC03-0.5-1.0	0.5-1	1.8 U	4.6 NJ	18 U	86 U
GL-SDC-3	4/25/2007	GLSDC03-1.0-2.0	1-2	1.8 U	5.2 NJ	18 U	86 U
GL-SDC-3	4/25/2007	GLSDC-03-2-4	2-4	0.79 J	2.4 NJ	17 U	81 U
GL-SDC-3	4/25/2007	DUP-018	2-4	1.7 U	2.3 NJ	17 U	83 U
GL-SDC-3	4/25/2007	GLSDC-03-4-6	4-6	1.1 U	1.1 U	11 U	55 U
GL-SDC-3	4/25/2007	GLSDC-03-6-8	6-8	1.3 U	1.3 U	13 U	61 U
GL-SDC-3	4/25/2007	GLSDC-03-8-10	8-10	1.4 U	1.4 U	14 U	69 U
GL-SDC-3	4/25/2007	GLSDC-031011.6	10-11.6	1.6 U	1.6 U	16 U	77 U
GL-SDT-1	4/25/2007	GLSDT-01-0-0.5	0-0.5	0.51 J	2.0 U	20 U	99 U
GL-SDT-2	4/25/2007	GLSDT-02-0-0.5	0-0.5	1.9 U	1.9 U	19 U	94 U
GL-SDT-3	4/25/2007	GLSDT-03-0-0.5	0-0.5	1.8 U	3.1 NJ	18 U	90 U
GL-SDT-4	4/25/2007	GLSDT-04-0-0.5	0-0.5	0.65 J	2.3 NJ	17 U	83 U
GL-SDT-5	4/25/2007	GLSDT-05-0-0.5	0-0.5	0.68 J	2.2 U	22 U	110 U

Notes:
Concentrations are reported on a dry-weight basis.
Non-detect values reported at the reporting limit.
µg/kg - micrograms per kilogram
J - estimated value
JN - The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.
The associated numerical value is an estimated concentration only.
P - A greater than 25% difference exists between GC columns.
R - rejected
U - The analyte was analyzed for but not detected.
UJ - The analyte was analyzed for but not detected. Detection limit is estimated.

Table B-18
Sediment PCB Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval (ft)	Aroclor 1016 (mg/kg)	Aroclor 1221 (mg/kg)	Aroclor 1232 (mg/kg)	Aroclor 1242 (mg/kg)	Aroclor 1248 (mg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)	Total PCBs (mg/kg)
DePue Lake											
D5	4/18/2007	D5-0-0.5	0-0.5	0.026 U	0.037 U	0.018 U	0.018 U	0.018 U	0.053	0.018 U	0.053
D7	4/17/2007	D7-0-0.5	0-0.5	0.029 U	0.040 U	0.020 U	0.020 U	0.020 U	0.090 JN	0.034	0.12
D9	4/17/2007	D9-0-0.5	0-0.5	0.021 U	0.030 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.030 U
F7	4/17/2007	F7-0-0.5	0-0.5	0.027 U	0.039 U	0.019 U	0.019 U	0.019 U	0.019 U	0.033	0.033
G8	4/24/2007	G8-0-0.5	0-0.5	0.030 U	0.043 U	0.021 U	0.021 U	0.021 U	0.040	0.021 U	0.040
J4	4/24/2007	J4-0-0.5	0-0.5	0.034 U	0.049 U	0.024 U	0.024 U	0.024 U	0.070	0.024 U	0.070
J6	4/24/2007	J6-0-0.5	0-0.5	0.025 U	0.035 U	0.018 U	0.018 U	0.018 U	0.052	0.018 U	0.052
K-1.5	4/18/2007	K1.5-0-0.5	0-0.5	0.017 U	0.024 U	0.012 U	0.012 U	0.012 U	0.023	0.012 U	0.023
K2	4/15/2007	K2-0-0.5	0-0.5	0.041 U	0.059 U	0.029 U	0.029 U	0.029 U	0.021 J	0.029 U	0.021
K2	4/15/2007	K2-0-0.5-1.0	0.5-1	0.039 U	0.055 U	0.027 U	0.027 U	0.027 U	0.023 J	0.027 U	0.023
K2	4/15/2007	K2-0-1.0-1.9	1-1.9	0.041 U	0.059 U	0.029 U	0.029 U	0.029 U	0.029 U	0.029 U	0.059 U
K2	4/14/2007	K2-2.0-4.0	2-4	0.020 U	0.028 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.028 U
K2	4/14/2007	K2-4.0-6.0	4-6	0.019 U	0.027 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.027 U
K2	4/14/2007	DUP-008	4-6	0.019 U	0.027 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.027 U
K2	4/14/2007	K2-6.0-8.0	6-8	0.018 U	0.025 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.025 U
K2	4/14/2007	K2-8.0-10.0	8-10	0.017 U	0.024 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.024 U
K2	4/14/2007	K2-10.0-12.0	10-12	0.015 U	0.022 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.022 U
K2	4/14/2007	K2-12.0-14.0	12-14	0.015 U	0.022 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.022 U
K2	4/14/2007	K2-14.0-14.8	14-14.8	0.015 U	0.022 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.022 U
L3	4/18/2007	L3-0-0.5	0-0.5	0.039 U	0.055 U	0.027 U	0.027 U	0.027 U	0.095 J	0.027 U	0.095
M-1.5	4/18/2007	M1.5-0-0.5	0-0.5	0.041 U	0.059 U	0.029 U	0.029 U	0.029 U	0.077	0.029 U	0.077
N.5-1.5	4/15/2007	N.5-1.5-0-0.5	0-0.5	0.073 U	0.10 U	0.052 U	0.052 U	0.052 U	0.052 U	0.052 U	0.10 U
N.5-1.5	4/15/2007	N.5-1.5-0.5-1.0	0.5-1	0.062 U	0.087 U	0.044 U	0.044 U	0.044 U	0.044 U	0.044 U	0.087 U
N.5-1.5	4/15/2007	N.5-1.5-1.0-1.9	1-1.9	0.055 U	0.077 U	0.039 U	0.039 U	0.039 U	0.045	0.039 U	0.045
N.5-1.5	4/15/2007	N.5-1.5-2-4	2-4	0.053 U	0.076 U	0.038 U	0.038 U	0.038 U	0.049 J	0.038 U	0.049
N.5-1.5	4/15/2007	N.5-1.5-4-6	4-6	0.049 UJ	0.069 U	0.035 U	0.035 U	0.035 U	0.049	0.035 U	0.049

See Notes on Page 3.

Table B-18
Sediment PCB Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval (ft)	Aroclor 1016 (mg/kg)	Aroclor 1221 (mg/kg)	Aroclor 1232 (mg/kg)	Aroclor 1242 (mg/kg)	Aroclor 1248 (mg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)	Total PCBs (mg/kg)
N.5-1.5	4/15/2007	N.5-1.5-6-8	6-8	0.045 U	0.064 U	0.032 U	0.032 U	0.032 U	0.11 JN	0.032 U	0.11
N.5-1.5	4/15/2007	N.5-1.5-8-10	8-10	0.032 U	0.045 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.045 U
N.5-1.5	4/15/2007	N.5-1.5-10-12	10-12	0.038 UJ	0.053 U	0.027 U	0.027 U	0.027 U	0.027 U	R	0.053 U
N.5-1.5	4/15/2007	N.5-1.5-12-14	12-14	0.034 U	0.049 U	0.024 U	0.024 U	0.024 U	0.024 U	0.024 UJ	0.049 U
N.5-1.5	4/15/2007	DUP-011	12-14	0.034 U	0.049 U	0.024 U	0.024 U	0.024 U	0.024 U	0.024 UJ	0.049 U
N.5-1.5	4/15/2007	N.5-1.5-14-16	14-16	0.032 U	0.045 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 UJ	0.045 U
N.5-1.5	4/15/2007	N.5-1.5-16-16.4	16-16.4	0.030 U	0.043 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 UJ	0.043 U
N-1.5	4/18/2007	N1.5-0-0.5	0-0.5	0.039 U	0.055 U	0.027 U	0.027 U	0.027 U	0.093 J	0.027 U	0.093
N3	4/18/2007	N3-0-0.5	0-0.5	0.026 U	0.037 U	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.037 U
O1	4/16/2007	O1-0-0.5	0-0.5	0.032 U	0.046 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.046 U
P.5-1	4/16/2007	P.5-1-0-0.5	0-0.5	0.024 U	0.033 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.033 U
P.5-1.5	4/15/2007	P.5-1.5-0-0.5	0-0.5	0.049 U	0.069 U	0.035 U	0.035 U	0.035 U	0.049	0.035 U	0.049
P.5-1.5	4/15/2007	P.5-1.5-0.5-1.0	0.5-1	0.048 UJ	0.068 U	0.034 U	0.034 U	0.13 J	0.079	0.025 J	0.23
P.5-1.5	4/15/2007	P.5-1.5-1.0-2.0	1-2	0.048 U	0.068 U	0.034 U	0.034 U	0.080	0.043	0.034 U	0.12
P.5-1.5	4/15/2007	P.5-1.5-2-4	2-4	0.049 U	0.069 U	0.035 U	0.035 U	0.25	0.18	0.072 J	0.50
P.5-1.5	4/15/2007	P.5-1.5-4-6	4-6	0.044 U	0.063 U	0.031 U	0.031 U	0.031 U	0.086	0.031 UJ	0.086
P.5-1.5	4/15/2007	P.5-1.5-6-8	6-8	0.023 U	0.032 U	0.016 U	0.016 U	0.016 U	0.016 U	0.016 U	0.032 U
P.5-1.5	4/15/2007	P.5-1.5-8-10	8-10	0.022 U	0.031 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.031 U
P.5-1.5	4/15/2007	P.5-1.5-10-12	10-12	0.021 U	0.030 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.030 U
P.5-1.5	4/15/2007	P.5-1.5-12-14	12-14	0.018 U	0.025 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.025 U
P.5-1.5	4/15/2007	P.5-1.5-14-16	14-16	0.018 U	0.026 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.026 U
P.5-1.5	4/15/2007	P.5-1.5-16-16.7	16-16.7	0.016 U	0.023 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.023 U
P-1.5	4/16/2007	P1.5-0-0.5	0-0.5	0.024 U	0.034 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.034 U
R-1.5	4/18/2007	R1.5-0-0.5	0-0.5	0.029 U	0.040 U	0.020 U	0.020 U	0.020 U	0.086 J	0.020 U	0.086

See Notes on Page 3.

Table B-18
Sediment PCB Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Location ID	Date Collected	Sample Name	Depth Interval (ft)	Aroclor 1016 (mg/kg)	Aroclor 1221 (mg/kg)	Aroclor 1232 (mg/kg)	Aroclor 1242 (mg/kg)	Aroclor 1248 (mg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)	Total PCBs (mg/kg)
SD-A	10/10/2007	SD-A 0-0.5	0-0.5	0.042 U	0.086 U	0.042 U	0.042 U	0.042 U	0.042 U	0.042 U	0.086 U
SD-A	10/10/2007	SD-F 0-0.5	0-0.5	0.043 U	0.088 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.088 U
SD-B	10/8/2007	SD-B 0-0.75	0-0.75	0.044 U	0.089 U	0.044 U	0.044 U	0.044 U	0.044 U	0.044 U	0.089 U
SD-C	10/8/2007	SD-C 0-0.7	0-0.7	0.043 U	0.088 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.088 U
SD-D	10/8/2007	SD-D 0-0.6	0-0.6	0.045 U	0.092 U	0.045 U	0.045 U	0.045 U	0.11	0.045 U	0.11
SD-E	10/8/2007	SD-E 0-0.5	0-0.5	0.043 U	0.087 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.087 U
SD-E	10/8/2007	SD-E 0.5-1	0.5-1	0.048 U	0.097 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.097 U
SD-E	10/8/2007	SD-E 1-1.8	1-1.8	0.046 U	0.093 U	0.046 U	0.046 U	0.046 U	0.082	0.046 U	0.082
Goose Lake											
GL-SDC-3	4/25/2007	GLSDC03-0-0.5	0-0.5	0.027 U	0.039 U	0.019 U	0.019 U	0.019 U	0.053 J	0.019 U	0.053
GL-SDC-3	4/25/2007	GLSDC03-0.5-1.0	0.5-1	0.025 U	0.035 U	0.018 U	0.018 U	0.13 NJ	0.093	0.018 U	0.22
GL-SDC-3	4/25/2007	GLSDC03-1.0-2.0	1-2	0.025 U	0.035 U	0.018 U	0.018 U	0.13 J	0.10	0.018 U	0.23
GL-SDC-3	4/25/2007	GLSDC-03-2-4	2-4	0.024 U	0.033 U	0.017 U	0.017 U	0.076 J	0.017 U	0.017 U	0.076
GL-SDC-3	4/25/2007	DUP-018	2-4	0.024 U	0.034 U	0.017 U	0.017 U	0.060	0.044	0.017 U	0.10
GL-SDC-3	4/25/2007	GLSDC-03-4-6	4-6	0.016 U	0.022 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.022 U
GL-SDC-3	4/25/2007	GLSDC-03-6-8	6-8	0.018 U	0.025 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.025 U
GL-SDC-3	4/25/2007	GLSDC-03-8-10	8-10	0.020 U	0.028 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.028 U
GL-SDC-3	4/25/2007	GLSDC-031011.6	10-11.6	0.022 U	0.031 U	0.016 U	0.016 U	0.016 U	0.016 U	0.016 U	0.031 U
GL-SDT-1	4/25/2007	GLSDT-01-0-0.5	0-0.5	0.029 U	0.040 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.040 U
GL-SDT-2	4/25/2007	GLSDT-02-0-0.5	0-0.5	0.027 U	0.039 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.039 U
GL-SDT-3	4/25/2007	GLSDT-03-0-0.5	0-0.5	0.026 U	0.037 U	0.018 U	0.018 U	0.018 U	0.068	0.018 U	0.068
GL-SDT-4	4/25/2007	GLSDT-04-0-0.5	0-0.5	0.024 U	0.034 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.034 U
GL-SDT-5	4/25/2007	GLSDT-05-0-0.5	0-0.5	0.031 U	0.044 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.044 U

Notes:
Concentrations are reported on a dry-weight basis.
Non-detect values reported at the reporting limit.
mg/kg - milligrams per kilogram
J - estimated value
JN - The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.
The associated numerical value is an estimated concentration only.
R - rejected
U - The analyte was analyzed for but not detected.
UJ - The analyte was analyzed for but not detected. Detection limit is estimated.

Table B-19
Fish TAL Metals Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Sample ID	Date Collected	Species	Target Area	Moisture (%)	Aluminum (mg/kg)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Calcium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Iron (mg/kg)
DePue Lake Fillet Samples															
OU5-FI1-015	6/5/2007	Black Bullhead	Area 1	82	20 U	5.9 U	0.98 U	0.10 J	0.014 J	0.49 U	139 J	0.98 U	4.9 U	0.20 J	10
OU5-FI1-052	6/6/2007	Black Bullhead	Area 1	82	18 U	5.5 U	0.92 U	0.12 J	0.45 U	0.45 U	150 J	0.92 U	4.6 U	0.52 J	14
OU5-FI2-029	6/5/2007	Black Bullhead	Area 2	82	20 U	5.9 U	0.99 U	20 U	0.022 J	0.48 U	132 J	0.99 U	4.9 U	0.36 J	12 U
OU5-FI2-067	6/6/2007	Black Bullhead	Area 2	82	18 U	5.5 U	0.93 U	0.10 J	0.020 J	0.46 U	388 J	0.30 J	4.6 U	0.36 J	9.1 J
OU5-FI3-072	6/6/2007	Black Bullhead	Area 3	82	19 U	5.6 U	0.93 U	0.25 J	0.021 J	0.46 U	950	0.19 J	4.6 U	0.35 J	8.7 J
OU5-FI1-051	6/6/2007	Brown Bullhead	Area 1	81	19 U	5.8 U	0.98 U	0.22 J	0.49 U	0.49 U	277 J	0.27 J	4.9 U	0.55 J	13
OU5-FI3-038	6/5/2007	Brown Bullhead	Area 3	81	19 U	5.7 U	0.95 U	0.10 J	0.023 J	0.47 U	113 J	0.95 U	4.8 U	0.19 J	5.0 J
OU5-FI3-039	6/5/2007	Brown Bullhead	Area 3	80	19 U	5.8 U	0.97 U	0.13 J	0.022 J	0.48 U	360 J	0.97 U	4.8 U	0.28 J	16
OU5-FI3-073	6/6/2007	Brown Bullhead	Area 3	84	19 U	5.6 U	0.93 U	0.27 J	0.014 J	0.47 U	986	0.22 J	4.7 U	0.90 J	13
OU5-FI3-040	6/5/2007	Yellow Bullhead	Area 3	82	3.6 J	5.6 U	0.94 U	0.14 J	0.019 J	0.46 U	272 J	0.94 U	4.7 U	0.24 J	17
OU5-FI1-016	6/4/2007	Channel Catfish	Area 1	77	20 U	5.9 U	0.99 U	20 U	0.023 J	0.50 U	83 J	0.99 U	5.0 U	2.5 U	3.9 J
OU5-FI1-053	6/6/2007	Channel Catfish	Area 1	79	20 U	6.0 U	0.98 U	0.060 J	0.49 U	0.49 U	132 J	0.16 J	4.9 U	0.32 J	3.9 J
OU5-FI2-064	6/6/2007	Channel Catfish	Area 2	79	20 U	6.0 U	1.0 U	0.046 J	0.016 J	0.50 U	125 J	0.21 J	5.0 U	0.29 J	5.4 J
OU5-FI2-065	6/6/2007	Channel Catfish	Area 2	74	19 U	5.8 U	0.98 U	0.062 J	0.019 J	0.49 U	123 J	0.15 J	4.9 U	0.22 J	4.3 J
OU5-FI2-066	6/6/2007	Channel Catfish	Area 2	77	20 U	5.9 U	0.99 U	20 U	0.014 J	0.49 U	144 J	0.23 J	4.9 U	0.37 J	8.3 J
OU5-FI3-074	6/7/2007	Channel Catfish	Area 3	81	19 U	5.7 U	0.94 U	0.23 J	0.019 J	0.47 U	1,130	0.25 J	4.7 U	0.45 J	7.6 J
OU5-FI3-075	6/7/2007	Channel Catfish	Area 3	79	1.7 J	5.7 U	0.95 U	0.25 J	0.025 J	0.46 U	747	0.17 J	4.7 U	0.53 J	14
OU5-FI1-054	6/6/2007	Common Carp	Area 1	78	19 U	5.6 U	0.94 U	0.36 J	0.47 U	0.47 U	950	0.94 U	4.7 U	0.31 J	9.3 U
OU5-FI1-055	6/6/2007	Common Carp	Area 1	76	19 U	5.6 U	0.92 U	0.13 J	0.47 U	0.47 U	722	0.92 U	4.6 U	0.40 J	9.3 U
OU5-FI1-056	6/6/2007	Common Carp	Area 1	80	19 U	5.6 U	0.94 U	0.076 J	0.46 U	0.46 U	472	0.94 U	4.7 U	0.40 J	9.4 U
OU5-FI2-061	6/6/2007	Common Carp	Area 2	84	19 U	5.8 U	0.96 U	0.33 J	0.49 U	0.49 U	659	0.96 U	4.8 U	0.42 J	9.6 U
OU5-FI2-062	6/6/2007	Common Carp	Area 2	74	20 U	6.0 U	1.0 U	0.12 J	0.50 U	0.50 U	93 J	1.0 U	5.0 U	0.29 J	18
OU5-FI2-063	6/6/2007	Common Carp	Area 2	78	18 U	5.5 U	0.92 U	0.16 J	0.46 U	0.46 U	159 J	0.92 U	4.6 U	0.44 J	11
OU5-FI3-037	6/5/2007	Common Carp	Area 3	78	3.6 J	5.9 U	0.99 U	20 U	0.028 J	0.50 U	760	0.99 U	5.0 U	0.61 J	14
OU5-FI3-070	6/6/2007	Common Carp	Area 3	78	18 U	5.5 U	0.91 U	18 U	0.46 U	0.46 U	132 J	0.91 U	4.6 U	0.39 J	11
OU5-FI3-071	6/6/2007	Common Carp	Area 3	77	19 U	5.6 U	0.93 U	0.052 J	0.48 U	0.48 U	122 J	0.93 U	4.7 U	0.32 J	9.4 U
OU5-FI1-010	6/4/2007	Freshwater Drum	Area 1	80	4.7 J	6.0 U	0.35 J	0.41 J	0.018 J	0.49 U	2,970	0.98 U	4.9 U	0.51 J	9.9 U
OU5-FI1-011	6/4/2007	Freshwater Drum	Area 1	78	1.2 J	5.7 U	0.96 U	0.25 J	0.018 J	0.47 U	1,120	0.96 U	4.8 U	0.29 J	9.5 U
OU5-FI1-012	6/4/2007	Freshwater Drum	Area 1	77	19 U	5.6 U	0.28 J	0.37 J	0.018 J	0.46 U	2,250	0.28 J	4.6 U	0.28 J	9.3 U
OU5-FI1-013	6/4/2007	Freshwater Drum	Area 1	81	20 U	5.9 U	0.99 U	20 U	0.017 J	0.50 U	793	0.99 U	5.0 U	0.38 J	8.7 J
OU5-FI1-014	6/4/2007	Freshwater Drum	Area 1	80	19 U	5.8 U	0.97 U	19 U	0.022 J	0.48 U	161 J	0.13 J	4.8 U	0.24 J	9.6 U
OU5-FI2-030	6/5/2007	Freshwater Drum	Area 2	80	19 U	5.7 U	0.93 U	19 U	0.026 J	0.47 U	420 J	0.18 J	4.7 U	0.24 J	9.4 U
OU5-FI2-031	6/5/2007	Freshwater Drum	Area 2	79	19 U	5.7 U	0.95 U	19 U	0.023 J	0.47 U	762	0.31 J	4.8 U	0.31 J	9.5 U
OU5-FI2-032	6/5/2007	Freshwater Drum	Area 2	78	1.2 J	5.8 U	0.97 U	19 U	0.026 J	0.48 U	605	0.97 U	4.9 U	2.4 U	9.7 U
OU5-FI2-033	6/5/2007	Freshwater Drum	Area 2	81	3.1 J	5.9 U	0.98 U	19 J	0.027 J	0.49 U	147 J	0.98 U	4.9 U	0.19 J	9.8 U
OU5-FI2-034	6/5/2007	Freshwater Drum	Area 2	79	20 U	5.9 U	0.99 U	20 U	0.021 J	0.50 U	204 J	0.99 U	5.0 U	0.34 J	9.9 U
OU5-FI3-041	6/5/2007	Freshwater Drum	Area 3	75	20 U	5.9 U	0.99 U	0.36 J	0.028 J	0.48 U	1,380	0.99 U	4.9 U	0.28 J	9.8 U
OU5-FI3-042	6/5/2007	Freshwater Drum	Area 3	80	20 U	6.0 U	0.33 J	0.61 J	0.028 J	0.49 U	1,870	1.0 U	5.0 U	0.45 J	17
OU5-FI3-043	6/5/2007	Freshwater Drum	Area 3	80	19 U	5.6 U	0.92 U	19 U	0.026 J	0.47 U	443 J	0.92 U	4.6 U	0.35 J	9.3 U
OU5-FI3-044	6/5/2007	Freshwater Drum	Area 3	83	20 U	5.9 U	0.99 U	0.77 J	0.031 J	0.49 U	3,860	0.99 U	5.0 U	0.24 J	9.9 U
OU5-FI3-045	6/5/2007	Freshwater Drum	Area 3	80	20 U	6.0 U	0.99 U	0.26 J	0.030 J	0.50 U	1,190	0.36 J	4.9 U	2.5 U	9.9 U
OU5-FI1-059	6/6/2007	Bluegill	Area 1	78	19 U	5.7 U	0.95 U	0.54 J	0.48 U	0.48 U	7,130	0.39 J	4.7 U	0.41 J	10 U
OU5-FI1-060	6/6/2007	Bluegill	Area 1	80	19 U	5.7 U	0.95 U	0.28 J	0.48 U	0.48 U	2,310	0.95 U	4.8 U	0.32 J	9.5 U
OU5-FI2-022	6/5/2007	Bluegill	Area 2	76	19 U	5.8 U	0.98 U	19 U	0.021 J	0.48 U	2,230	0.98 U	4.9 U	0.23 J	9.7 U
OU5-FI2-023	6/5/2007	Bluegill	Area 2	78	1.2 J	6.0 U	1.0 U	0.31 J	0.027 J	0.49 U	2,460	1.0 U	5.0 U	0.29 J	9.9 U

See notes on Page 6.

Table B-19
Fish TAL Metals Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Sample ID	Date Collected	Species	Target Area	Lead (mg/kg)	Magnesium (mg/kg)	Manganese (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Potassium (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Sodium (mg/kg)	Thallium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
DePue Lake Fillet Samples															
OU5-FI1-015	6/5/2007	Black Bullhead	Area 1	0.98 U	319 J	0.27 J	0.080 U	3.9 U	4,710	1.3 J	0.98 U	786	2.5 U	4.9 U	8.6
OU5-FI1-052	6/6/2007	Black Bullhead	Area 1	0.92 U	292 J	0.25 J	0.086 U	3.7 U	4,010	0.88 J	0.92 U	949	2.3 U	4.6 U	12
OU5-FI2-029	6/5/2007	Black Bullhead	Area 2	0.99 U	306 J	0.23 J	0.10 U	3.9 U	4,670	1.1 J	0.99 U	832	2.5 U	4.9 U	6.8
OU5-FI2-067	6/6/2007	Black Bullhead	Area 2	0.18 J	196 J	0.18 J	0.050 J	0.041 J	2,720	3.2 U	0.93 U	413 J	2.3 U	4.6 U	10
OU5-FI3-072	6/6/2007	Black Bullhead	Area 3	0.19 J	324 J	0.56 J	0.063 J	3.7 U	4,220	1.3 J	0.93 U	628	2.3 U	4.6 U	9.5
OU5-FI1-051	6/6/2007	Brown Bullhead	Area 1	0.22 J	482 J	1.4 J	0.100 U	3.9 U	6,100	1.8 J	0.98 U	1,380	2.4 U	4.9 U	16
OU5-FI3-038	6/5/2007	Brown Bullhead	Area 3	0.95 U	248 J	0.078 J	0.095 U	3.8 U	4,030	3.3 U	0.95 U	799	2.4 U	4.8 U	6.5
OU5-FI3-039	6/5/2007	Brown Bullhead	Area 3	0.97 U	414 J	0.42 J	0.10 U	3.8 U	5,600	1.3 J	0.97 U	1,560	2.4 U	4.8 U	14
OU5-FI3-073	6/6/2007	Brown Bullhead	Area 3	0.17 J	273 J	0.60 J	0.079 J	3.7 U	3,840	3.3 U	0.93 U	632	2.3 U	4.7 U	11
OU5-FI3-040	6/5/2007	Yellow Bullhead	Area 3	0.94 U	296 J	3.9	0.096 U	3.7 U	3,630	1.4 J	0.94 U	1,270	2.3 U	0.050 J	9.1
OU5-FI1-016	6/4/2007	Channel Catfish	Area 1	0.99 U	226 J	0.080 J	0.092 U	4.0 U	3,440	1.1 J	0.99 U	502	2.5 U	5.0 U	4.5 J
OU5-FI1-053	6/6/2007	Channel Catfish	Area 1	0.15 J	270 J	0.21 J	0.10 U	4.0 U	4,220	1.3 J	0.98 U	811	2.5 U	4.9 U	7.3
OU5-FI2-064	6/6/2007	Channel Catfish	Area 2	1.0 U	295 J	0.25 J	0.096 U	4.0 U	4,580	1.3 J	1.0 U	768	2.5 U	5.0 U	6.7
OU5-FI2-065	6/6/2007	Channel Catfish	Area 2	0.13 J	239 J	0.20 J	0.072 J	3.9 U	3,330	3.4 U	0.98 U	774	2.4 U	4.9 U	7.0
OU5-FI2-066	6/6/2007	Channel Catfish	Area 2	0.99 U	323 J	0.23 J	0.044 J	4.0 U	4,970	1.6 J	0.99 U	1,020	2.5 U	4.9 U	9.8
OU5-FI3-074	6/7/2007	Channel Catfish	Area 3	0.22 J	310 J	0.80 J	0.088 J	3.8 U	4,430	1.4 J	0.94 U	677	2.4 U	4.7 U	29
OU5-FI3-075	6/7/2007	Channel Catfish	Area 3	0.17 J	270 J	0.44 J	0.080 J	3.8 U	3,380	1.5 J	0.95 U	559	2.4 U	4.7 U	16
OU5-FI1-054	6/6/2007	Common Carp	Area 1	0.94 U	230 J	0.58 J	0.091 U	3.8 U	2,680	1.0 J	0.94 U	437 J	2.3 U	4.7 U	13
OU5-FI1-055	6/6/2007	Common Carp	Area 1	0.92 U	253 J	0.38 J	0.094 U	3.7 U	2,970	1.2 J	0.92 U	573	2.3 U	4.6 U	16
OU5-FI1-056	6/6/2007	Common Carp	Area 1	0.94 U	259 J	0.48 J	0.100 U	3.7 U	3,520	0.96 J	0.94 U	535	2.3 U	4.7 U	12
OU5-FI2-061	6/6/2007	Common Carp	Area 2	0.96 U	283 J	0.33 J	0.083 U	3.9 U	3,780	0.86 J	0.96 U	868	2.4 U	4.8 U	9.9
OU5-FI2-062	6/6/2007	Common Carp	Area 2	1.0 U	180 J	0.25 J	0.079 U	0.14 J	2,470	0.76 J	1.0 U	671	2.5 U	5.0 U	6.1
OU5-FI2-063	6/6/2007	Common Carp	Area 2	0.92 U	315 J	0.40 J	0.10 U	3.7 U	4,730	1.0 J	0.92 U	1,020	2.3 U	4.6 U	7.0
OU5-FI3-037	6/5/2007	Common Carp	Area 3	0.99 U	222 J	2.8	0.099 U	4.0 U	2,960	0.93 J	0.99 U	534	2.5 U	5.0 U	14
OU5-FI3-070	6/6/2007	Common Carp	Area 3	0.91 U	282 J	0.33 J	0.067 J	3.7 U	3,910	1.2 J	0.91 U	996	2.3 U	4.6 U	7.5
OU5-FI3-071	6/6/2007	Common Carp	Area 3	0.93 U	292 J	0.29 J	0.038 J	3.7 U	4,230	1.6 J	0.93 U	961	2.3 U	4.7 U	8.3
OU5-FI1-010	6/4/2007	Freshwater Drum	Area 1	0.98 U	324 J	0.70 J	0.045 J	4.0 U	3,670	0.94 J	0.98 U	785	2.5 U	4.9 U	6.7
OU5-FI1-011	6/4/2007	Freshwater Drum	Area 1	0.96 U	228 J	0.47 J	0.083 U	3.8 U	2,600	1.0 J	0.96 U	703	2.4 U	4.8 U	5.3 J
OU5-FI1-012	6/4/2007	Freshwater Drum	Area 1	0.92 U	329 J	0.46 J	0.083 U	3.7 U	3,680	1.4 J	0.92 U	715	2.3 U	4.6 U	5.2 J
OU5-FI1-013	6/4/2007	Freshwater Drum	Area 1	0.99 U	334 J	0.36 J	0.096 U	4.0 U	4,180	1.4 J	0.99 U	1,010	2.5 U	5.0 U	6.9
OU5-FI1-014	6/4/2007	Freshwater Drum	Area 1	0.97 U	271 J	1.5 U	0.040 J	3.8 U	3,740	1.0 J	0.97 U	858	2.4 U	4.8 U	4.8 J
OU5-FI2-030	6/5/2007	Freshwater Drum	Area 2	0.93 U	203 J	1.4 U	0.093 J	3.8 U	2,780	0.83 J	0.93 U	820	2.4 U	4.7 U	3.3 J
OU5-FI2-031	6/5/2007	Freshwater Drum	Area 2	0.95 U	365 J	0.45 J	0.060 J	3.8 U	4,920	1.4 J	0.95 U	937	2.4 U	4.8 U	6.2
OU5-FI2-032	6/5/2007	Freshwater Drum	Area 2	0.97 U	160 J	0.17 J	0.071 J	3.9 U	1,770	0.71 J	0.97 U	497	2.4 U	4.9 U	3.2 J
OU5-FI2-033	6/5/2007	Freshwater Drum	Area 2	0.98 U	183 J	0.27 J	0.10	0.23 J	2,360	0.62 J	0.98 U	486 J	2.5 U	4.9 U	12
OU5-FI2-034	6/5/2007	Freshwater Drum	Area 2	0.99 U	207 J	0.25 J	0.061 J	0.25 J	2,790	0.80 J	0.99 U	590	2.5 U	5.0 U	3.7 J
OU5-FI3-041	6/5/2007	Freshwater Drum	Area 3	0.99 U	232 J	0.28 J	0.076 J	3.9 U	2,970	1.1 J	0.99 U	846	2.4 U	4.9 U	5.4 J
OU5-FI3-042	6/5/2007	Freshwater Drum	Area 3	1.0 U	307 J	0.53 J	0.083 J	4.0 U	3,650	1.1 J	1.0 U	794	2.5 U	5.0 U	4.2 J
OU5-FI3-043	6/5/2007	Freshwater Drum	Area 3	0.92 U	208 J	0.27 J	0.065 J	3.7 U	2,450	1.2 J	0.92 U	713	2.3 U	4.6 U	3.7 J
OU5-FI3-044	6/5/2007	Freshwater Drum	Area 3	0.99 U	287 J	0.66 J	0.16	4.0 U	2,980	0.82 J	0.99 U	726	2.5 U	5.0 U	5.1 J
OU5-FI3-045	6/5/2007	Freshwater Drum	Area 3	0.99 U	231 J	0.42 J	0.091 U	4.0 U	2,570	0.93 J	0.99 U	768	2.5 U	4.9 U	4.1 J
OU5-FI1-059	6/6/2007	Bluegill	Area 1	0.95 U	462 J	3.1	0.099 U	0.080 J	4,540	1.6 J	0.95 U	1,380	2.4 U	0.041 J	14
OU5-FI1-060	6/6/2007	Bluegill	Area 1	0.95 U	291 J	1.6	0.091 U	3.8 U	3,340	1.4 J	0.95 U	882	2.4 U	4.8 U	8.6
OU5-FI2-022	6/5/2007	Bluegill	Area 2	0.98 U	249 J	1.3 J	0.096 U	3.9 U	2,680	1.2 J	0.98 U	832	2.4 U	4.9 U	8.0
OU5-FI2-023	6/5/2007	Bluegill	Area 2	1.0 U	264 J	1.8	0.044 J	4.0 U	2,750	1.0 J	1.0 U	884	2.5 U	5.0 U	11

See notes on Page 6.

Table B-19
Fish TAL Metals Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Sample ID	Date Collected	Species	Target Area	Moisture (%)	Aluminum (mg/kg)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Calcium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Iron (mg/kg)
DePue Lake Whole-body Samples															
OU5-FI1-001	6/4/2007	Freshwater Drum	Area 1	77	40	6.0 U	0.49 J	3.1 J	0.11 J	0.38 J	13,700	1.0 U	5.0 U	1.6 J	83 U
OU5-FI2-017	6/5/2007	Freshwater Drum	Area 2	72	283	5.8 U	0.98 U	14 J	0.48 U	2.1	16,600	1.8	4.8 U	11	675
OU5-FI3-076	6/6/2007	Freshwater Drum	Area 3	72	40	5.5 U	0.48 J	3.4 J	0.026 J	0.45 U	21,400	1.7	4.6 U	0.82 J	83
OU5-FI3-077	6/6/2007	Freshwater Drum	Area 3	73	18 J	5.6 U	0.32 J	3.3 J	0.12 J	0.11 J	16,500	0.57 J	4.7 U	0.67 J	40
OU5-FI1-005	6/4/2007	Gizzard Shad	Area 1	73	163	5.8 U	0.54 J	7.9 J	0.030 J	1	11,600	1.9	4.8 U	6.5	395
OU5-FI1-006	6/4/2007	Gizzard Shad	Area 1	78	426	5.6 U	1.4	53	0.076 J	10	17,200	2.2	0.65 J	32	1,360
OU5-FI1-007	6/4/2007	Gizzard Shad	Area 1	77	181	5.5 U	0.66 J	11 J	0.039 J	1.5	16,500	1.3	4.6 U	9.5	426
OU5-FI1-008	6/4/2007	Gizzard Shad	Area 1	71	70	5.9 U	0.99 U	4.4 J	0.047 J	0.88	3,240	0.99 U	5.0 U	4.0	199
OU5-FI1-009	6/4/2007	Gizzard Shad	Area 1	76	102	5.8 U	0.97 U	8.4 J	0.48 U	1.2	10,500	0.97 U	4.9 U	5.6	286
OU5-FI2-024	6/5/2007	Gizzard Shad	Area 2	64	83	5.9 U	0.65 J	3.8 J	0.50 U	0.047 J	10,200	1.0 U	5.0 U	1.4 J	122
OU5-FI2-025	6/5/2007	Gizzard Shad	Area 2	79	157	5.5 U	0.57 J	9.3 J	0.47 U	0.55	13,300	1.3	0.17 J	3.2	422
OU5-FI2-026	6/5/2007	Gizzard Shad	Area 2	71	223	6.0 U	0.82 J	13 J	0.50 U	0.62	18,400	1.5	0.27 J	4.9	595
OU5-FI2-027	6/5/2007	Gizzard Shad	Area 2	74	185	6.0 U	0.65 J	9.5 J	0.031 J	0.60	17,600	1.2	0.34 J	4.3	515
OU5-FI2-028	6/5/2007	Gizzard Shad	Area 2	70	142	5.9 U	0.60 J	6.7 J	0.51 U	0.33 J	13,800	0.98 J	0.14 J	2.5	381
OU5-FI3-046	6/5/2007	Gizzard Shad	Area 3	74	175	6.0 U	0.82 J	4.7 J	0.51 U	0.13 J	12,200	1.2	0.14 J	2.0 J	387
OU5-FI3-047	6/5/2007	Gizzard Shad	Area 3	75	255	5.9 U	0.58 J	5.5 J	0.48 U	0.22 J	12,300	1.4	0.28 J	2.1 J	547
OU5-FI3-048	6/5/2007	Gizzard Shad	Area 3	77	280	6.0 U	0.68 J	6.0 J	0.49 U	0.23 J	12,700	3.1	0.40 J	2.3 J	634
OU5-FI3-049	6/5/2007	Gizzard Shad	Area 3	73	219	5.8 U	0.60 J	5.5 J	0.030 J	0.17 J	13,000	1.5	0.13 J	2.2 J	505
OU5-FI3-050	6/5/2007	Gizzard Shad	Area 3	73	218	6.0 U	0.65 J	5.4 J	0.027 J	0.21 J	9,570	1.3	0.15 J	2.6	566
OU5-FI1-057	6/6/2007	Bluegill	Area 1	75	16 J	6.0 U	0.50 J	1.7 J	0.028 J	0.50 U	15,200	0.98 U	4.9 U	1.4 J	34
OU5-FI1-058	6/6/2007	Bluegill	Area 1	73	39	5.9 U	0.51 J	2.5 J	0.035 J	0.49 U	20,000	0.97 U	4.9 U	0.81 J	55
OU5-FI2-068	6/5/2007	Bluegill	Area 2	71	7.5 J	5.7 U	0.94 U	1.5 J	0.024 J	0.47 U	12,800	0.94 U	4.7 U	0.47 J	15
OU5-FI2-069	6/5/2007	Bluegill	Area 2	73	22	5.5 U	0.93 U	1.4 J	0.027 J	0.46 U	13,000	0.93 U	4.6 U	0.55 J	51
OU5-FI3-078	6/6/2007	Bluegill	Area 3	74	4.7 J	5.8 U	0.97 U	1.6 J	0.49 U	0.49 U	13,500	0.97 U	4.8 U	0.44 J	9.5 J
OU5-FI3-079	6/6/2007	Bluegill	Area 3	76	8.0 J	5.9 U	0.97 U	1.2 J	0.028 J	0.50 U	9,620	0.97 U	4.9 U	0.45 J	16
OU5-FI1-002	6/4/2007	Orangespotted Sunfish	Area 1	73	5.9 J	5.9 U	1.0 U	1.0 J	0.027 J	0.48 U	9,580	1.0 U	5.0 U	2.5 U	12 U
OU5-FI1-003	6/4/2007	Orangespotted Sunfish	Area 1	74	8.8 J	5.9 U	1.0 U	1.3 J	0.034 J	0.50 U	12,500	1.0 U	4.9 U	2.5 U	18 U
OU5-FI2-020	6/5/2007	Orangespotted Sunfish	Area 2	78	15 J	5.5 U	0.47 J	2.1 J	0.45 U	0.45 U	15,200	0.92 U	4.6 U	2.3 U	32 U
OU5-FI2-021	6/5/2007	Orangespotted Sunfish	Area 2	70	13 J	7.4 U	0.33 J	1.6 J	0.45 U	0.45 U	12,300	0.93 U	4.6 U	2.3 U	28 U
OU5-FI3-080	6/5/2007	Orangespotted Sunfish	Area 3	77	20	5.6 U	0.32 J	2.1 J	0.025 J	0.46 U	13,700	0.92 U	4.6 U	0.67 J	36

See notes on Page 6.

Table B-19
Fish TAL Metals Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Sample ID	Date Collected	Species	Target Area	Lead (mg/kg)	Magnesium (mg/kg)	Manganese (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Potassium (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Sodium (mg/kg)	Thallium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
DePue Lake Whole-body Samples															
OU5-FI1-001	6/4/2007	Freshwater Drum	Area 1	1.2	425 J	6.7	0.10 U	0.071 J	2,940	3.5 U	1.0 U	1,120	2.5 U	0.23 J	61
OU5-FI2-017	6/5/2007	Freshwater Drum	Area 2	5.5	860	42	0.10 U	3.9 U	3,050	3.4 U	0.98 U	1,230	2.4 U	4.8 U	300
OU5-FI3-076	6/6/2007	Freshwater Drum	Area 3	0.91 U	599	8.2	0.099 U	0.11 J	3,950	1.2 J	0.91 U	1,550	2.3 U	0.31 J	28
OU5-FI3-077	6/6/2007	Freshwater Drum	Area 3	0.94 U	530	4.5	0.094 U	0.11 J	3,820	1.2 J	0.054 J	1,380	2.3 U	0.24 J	21
OU5-FI1-005	6/4/2007	Gizzard Shad	Area 1	3.2	581	27	0.062 J	0.67 J	2,280	3.4 U	0.97 U	866	2.4 U	0.46 J	174
OU5-FI1-006	6/4/2007	Gizzard Shad	Area 1	34	1,100	80	0.27	1.3 J	3,960	3.3 U	0.45 J	1,360	2.3 U	1.2 J	856
OU5-FI1-007	6/4/2007	Gizzard Shad	Area 1	4.2	695	32	0.71	0.64 J	3,470	3.2 U	0.091 J	1,320	2.3 U	0.62 J	235
OU5-FI1-008	6/4/2007	Gizzard Shad	Area 1	2.8	207 J	12	0.23	0.19 J	1,050	3.5 U	0.99 U	423 J	2.5 U	0.24 J	110
OU5-FI1-009	6/4/2007	Gizzard Shad	Area 1	3.6	404 J	20	0.13	3.9 U	1,660	3.4 U	0.97 U	685	2.4 U	4.9 U	152
OU5-FI2-024	6/5/2007	Gizzard Shad	Area 2	0.83 J	428 J	27	0.097 U	0.079 J	3,330	3.5 U	0.050 J	954	2.5 U	0.22 J	32
OU5-FI2-025	6/5/2007	Gizzard Shad	Area 2	3.2	619	35	0.098	0.59 J	2,710	3.2 U	0.10 J	996	2.3 U	0.59 J	86
OU5-FI2-026	6/5/2007	Gizzard Shad	Area 2	3.9	982	49	0.091	0.65 J	5,710	3.5	0.088 J	1,820	2.5 U	0.76 J	107
OU5-FI2-027	6/5/2007	Gizzard Shad	Area 2	2.9	803	48	0.075 J	0.49 J	4,250	3.5 U	0.10 J	1,600	2.5 U	0.62 J	93
OU5-FI2-028	6/5/2007	Gizzard Shad	Area 2	1.9	605	37	0.069 J	0.39 J	2,850	3.5 U	0.075 J	1,060	2.5 U	0.54 J	62
OU5-FI3-046	6/5/2007	Gizzard Shad	Area 3	1.3	801	26	0.090 U	0.46 J	4,380	3.5 U	0.11 J	1,340	2.5 U	0.51 J	39
OU5-FI3-047	6/5/2007	Gizzard Shad	Area 3	1.7	746	31	0.083 J	0.73 J	2,650	3.4 U	0.098 J	927	2.4 U	0.66 J	47
OU5-FI3-048	6/5/2007	Gizzard Shad	Area 3	1.9	774	34	0.063 J	0.89 J	2,490	3.5 U	0.091 J	953	2.5 U	1.6 J	53
OU5-FI3-049	6/5/2007	Gizzard Shad	Area 3	1.6	743	34	0.036 J	0.55 J	2,780	3.4 U	0.074 J	1,020	2.4 U	0.66 J	44
OU5-FI3-050	6/5/2007	Gizzard Shad	Area 3	1.9	740	41	0.10 U	1.0 J	3,090	0.79 J	1.0 U	1,180	2.5 U	0.62 J	52
OU5-FI1-057	6/6/2007	Bluegill	Area 1	0.98 U	514	8.5	0.10 U	0.083 J	3,530	0.73 J	0.98 U	1,010	2.5 U	0.21 J	36
OU5-FI1-058	6/6/2007	Bluegill	Area 1	0.97 U	597	14	0.095 U	3.9 U	3,270	0.86 J	0.97 U	1,190	2.5 U	0.30 J	40
OU5-FI2-068	6/5/2007	Bluegill	Area 2	0.94 U	384 J	9.3	0.11	3.8 U	2,300	0.59 J	0.94 U	861	2.4 U	0.27 J	24
OU5-FI2-069	6/5/2007	Bluegill	Area 2	0.93 U	453 J	7.0	0.10 U	3.7 U	3,140	0.68 J	0.93 U	958	2.3 U	0.17 J	24
OU5-FI3-078	6/6/2007	Bluegill	Area 3	0.97 U	356 J	6.1	0.095 U	0.13 J	2,130	0.51 J	0.97 U	722	2.4 U	0.12 J	21
OU5-FI3-079	6/6/2007	Bluegill	Area 3	0.97 U	344 J	6.1	0.040 J	3.9 U	2,650	0.43 J	0.97 U	758	2.4 U	0.11 J	23
OU5-FI1-002	6/4/2007	Orangespotted Sunfish	Area 1	0.30 J	347 J	3.1	0.094 U	4.0 U	2,630	3.5 U	1.0 U	839	2.5 U	5.0 U	27
OU5-FI1-003	6/4/2007	Orangespotted Sunfish	Area 1	0.47 J	434 J	4.5	0.100 U	4.0 U	3,160	3.5 U	1.0 U	986	2.5 U	0.089 J	35
OU5-FI2-020	6/5/2007	Orangespotted Sunfish	Area 2	0.31 J	484	6.3	0.094 U	3.7 U	3,400	3.2 U	0.049 J	1,110	2.3 U	0.16 J	33
OU5-FI2-021	6/5/2007	Orangespotted Sunfish	Area 2	0.45 J	373 J	4.5	0.099 U	3.7 U	2,590	3.3 U	0.066 J	924	2.3 U	0.096 J	28
OU5-FI3-080	6/5/2007	Orangespotted Sunfish	Area 3	0.92 U	465	4.8	0.099 U	3.7 U	3,610	0.92 J	0.92 U	1,150	2.3 U	0.076 J	29

See notes on Page 6.

Table B-19
Fish TAL Metals Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Sample ID	Date Collected	Species	Target Area	Moisture (%)	Aluminum (mg/kg)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Calcium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Iron (mg/kg)
Goose Lake Fillet Samples															
GL-FI-007	6/6/2007	Black Bullhead	Background	82	19 U	5.6 U	0.92 U	0.18 J	0.022 J	0.46 U	199 J	0.92 U	4.6 U	0.22 J	14
GL-FI-008	6/6/2007	Black Bullhead	Background	82	19 U	5.8 U	0.96 U	0.24 J	0.022 J	0.48 U	753	0.96 U	4.8 U	0.59 J	21
GL-FI-006	6/6/2007	Yellow Bullhead	Background	80	20 U	6.0 U	1.0 U	0.16 J	0.024 J	0.50 U	206 J	1.0 U	5.0 U	2.5 U	11
GL-FI-005	6/6/2007	Channel Catfish	Background	76	18 U	5.5 U	0.27 J	18 U	0.020 J	0.46 U	152 J	0.92 U	4.6 U	0.29 J	7.2 J
GL-FI-009	6/6/2007	Channel Catfish	Background	79	1.7 J	5.6 U	0.28 J	0.10 J	0.019 J	0.47 U	589	0.34 J	4.7 U	0.43 J	16
GL-FI-001	6/6/2007	Common Carp	Background	78	2.8 J	5.8 U	0.96 U	19 U	0.026 J	0.48 U	396 J	0.96 U	4.9 U	1.0 J	20
GL-FI-002	6/6/2007	Common Carp	Background	75	19 U	5.7 U	0.94 U	0.094 J	0.47 U	0.47 U	374 J	0.94 U	4.8 U	0.50 J	11 U
GL-FI-003	6/6/2007	Common Carp	Background	75	19 U	5.8 U	0.97 U	0.11 J	0.47 U	0.47 U	441 J	0.97 U	4.8 U	0.35 J	9.6 U
GL-FI-004	6/6/2007	Common Carp	Background	78	1.4 J	5.9 U	0.43 J	0.86 J	0.50 U	0.12 J	4,640	0.99 U	5.0 U	1.4 J	26
GL-FI-010	6/6/2007	Freshwater Drum	Background	79	2.0 J	6.0 U	0.98 U	1.3 J	0.49 U	0.49 U	3,470	0.98 U	4.9 U	0.28 J	9.9 U
GL-FI-011	6/6/2007	Freshwater Drum	Background	79	3.1 J	6.0 U	1.0 U	0.30 J	0.50 U	0.50 U	1,280	1.0 U	5.0 U	0.39 J	10 U
GL-FI-012	6/6/2007	Freshwater Drum	Background	67	2.1 J	6.0 U	1.0 U	0.73 J	0.50 U	0.50 U	2,940	1.0 U	5.0 U	0.47 J	10 U
GL-FI-013	6/6/2007	Freshwater Drum	Background	80	19 U	5.7 U	0.96 U	0.24 J	0.48 U	0.48 U	1,200	0.96 U	4.8 U	0.64 J	9.5 U
GL-FI-019	6/6/2007	Bluegill	Background	79	4.0 J	5.6 U	0.92 U	0.29 J	0.46 U	0.46 U	2,710	0.92 U	4.6 U	0.36 J	14
GL-FI-020	6/6/2007	Bluegill	Background	78	11 J	5.5 U	0.92 U	0.56 J	0.45 U	0.45 U	4,100	0.92 U	4.6 U	0.32 J	24
Goose Lake Whole-body Samples															
GL-FI-014	6/6/2007	Freshwater Drum	Background	73	75	6.0 U	0.46 J	4.6 J	0.030 J	0.49 U	23,900	0.68 J	5.0 U	0.85 J	107
GL-FI-015	6/6/2007	Freshwater Drum	Background	74	42	6.0 U	1.0 U	3.4 J	0.031 J	0.49 U	22,200	0.83 J	5.0 U	0.85 J	73
GL-FI-016	6/6/2007	Freshwater Drum	Background	73	22	5.9 U	0.38 J	3.1 J	0.055 J	0.49 U	19,700	0.57 J	4.9 U	0.66 J	46
GL-FI-021	6/6/2007	Gizzard Shad	Background	74	414	5.9 U	0.78 J	11 J	0.047 J	0.20 J	18,600	2.5	0.24 J	3.8	953
GL-FI-022	6/6/2007	Gizzard Shad	Background	75	307	6.0 U	0.43 J	7.5 J	0.035 J	0.12 J	13,300	1.4	5.0 U	2.4 J	655
GL-FI-023	6/6/2007	Gizzard Shad	Background	72	385	6.0 U	0.72 J	9.7 J	0.039 J	0.15 J	23,300	2.1	0.11 J	3.2	756
GL-FI-024	6/6/2007	Gizzard Shad	Background	75	224	5.9 U	0.61 J	6.7 J	0.028 J	0.058 J	19,800	1.6	5.0 U	2.5 J	488
GL-FI-025	6/6/2007	Gizzard Shad	Background	72	274	6.0 U	0.68 J	5.8 J	0.031 J	0.51 U	18,300	1.4	5.0 U	1.9 J	544
GL-FI-017	6/6/2007	Bluegill	Background	73	28	5.5 U	0.47 J	2.0 J	0.027 J	0.47 U	14,100	0.91 U	4.6 U	0.69 J	43
GL-FI-018	6/6/2007	Bluegill	Background	75	22	5.6 U	0.55 J	2.0 J	0.030 J	0.48 U	13,800	1.2	4.7 U	0.63 J	40

See notes on Page 6.

Table B-19
Fish TAL Metals Data

Human Health Risk Assessment
New Jersey Zinc/Mobil Chemical Site
DePue, Illinois

Sample ID	Date Collected	Species	Target Area	Lead (mg/kg)	Magnesium (mg/kg)	Manganese (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Potassium (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Sodium (mg/kg)	Thallium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
Goose Lake Fillet Samples															
GL-FI-007	6/6/2007	Black Bullhead	Background	0.92 U	307 J	0.46 J	0.046 J	3.7 U	4,080	1.8 J	0.92 U	1,030	2.3 U	0.028 J	7.6
GL-FI-008	6/6/2007	Black Bullhead	Background	0.20 J	394 J	0.43 J	0.080 U	3.9 U	5,880	1.6 J	0.96 U	1,600	2.4 U	4.8 U	12
GL-FI-006	6/6/2007	Yellow Bullhead	Background	1.0 U	356 J	0.36 J	0.087 U	4.0 U	4,950	1.7 J	1.0 U	1,210	2.5 U	0.030 J	8.5
GL-FI-005	6/6/2007	Channel Catfish	Background	0.92 U	386 J	0.16 J	0.11	3.7 U	6,100	1.5 J	0.92 U	1,020	2.3 U	4.6 U	12
GL-FI-009	6/6/2007	Channel Catfish	Background	0.21 J	415 J	0.64 J	0.096 U	3.8 U	5,520	2.0 J	0.94 U	1,270	2.3 U	4.7 U	12
GL-FI-001	6/6/2007	Common Carp	Background	0.96 U	247 J	0.44 J	0.064 J	3.9 U	3,530	1.3 J	0.96 U	714	2.4 U	4.9 U	14
GL-FI-002	6/6/2007	Common Carp	Background	0.94 U	265 J	0.23 J	0.042 J	3.8 U	3,450	1.6 J	0.94 U	546	2.4 U	4.8 U	16
GL-FI-003	6/6/2007	Common Carp	Background	0.97 U	276 J	0.30 J	0.062 J	3.8 U	3,310	1.4 J	0.97 U	583	2.4 U	4.8 U	13
GL-FI-004	6/6/2007	Common Carp	Background	0.99 U	592	1.2 J	0.095 J	0.070 J	6,890	2.4 J	0.99 U	1,110	2.5 U	5.0 U	24
GL-FI-010	6/6/2007	Freshwater Drum	Background	0.98 U	349 J	0.81 J	0.17	4.0 U	3,680	1.1 J	0.98 U	954	2.5 U	0.032 J	6.4
GL-FI-011	6/6/2007	Freshwater Drum	Background	1.0 U	357 J	0.37 J	0.11	0.050 J	4,340	1.7 J	1.0 U	1,200	2.5 U	5.0 U	6.9
GL-FI-012	6/6/2007	Freshwater Drum	Background	1.0 U	327 J	0.56 J	0.083 J	4.0 U	3,240	1.1 J	1.0 U	993	2.5 U	5.0 U	6.1
GL-FI-013	6/6/2007	Freshwater Drum	Background	0.96 U	308 J	0.30 J	0.042 J	3.8 U	3,600	1.5 J	0.96 U	888	2.4 U	4.8 U	5.0 J
GL-FI-019	6/6/2007	Bluegill	Background	0.92 U	298 J	2.4	0.048 J	3.7 U	2,980	1.2 J	0.92 U	1,090	2.3 U	4.6 U	8.9
GL-FI-020	6/6/2007	Bluegill	Background	0.92 U	288 J	2.8	0.095 U	3.7 U	2,630	1.2 J	0.92 U	819	2.3 U	4.6 U	11
Goose Lake Whole-body Samples															
GL-FI-014	6/6/2007	Freshwater Drum	Background	1.0 U	644	6.5	0.090 U	0.12 J	3,930	1.3 J	1.0 U	1,590	2.5 U	0.33 J	25
GL-FI-015	6/6/2007	Freshwater Drum	Background	1.0 U	599	6.2	0.096 U	0.093 J	4,330	1.3 J	1.0 U	1,550	2.5 U	0.28 J	24
GL-FI-016	6/6/2007	Freshwater Drum	Background	0.98 U	502	4.2	0.10 U	3.9 U	3,300	1.2 J	0.98 U	1,310	2.5 U	0.14 J	20
GL-FI-021	6/6/2007	Gizzard Shad	Background	2.3	1,040	48	0.096 U	1.2 J	3,320	1.1 J	0.98 U	1,480	2.5 U	1.2 J	33
GL-FI-022	6/6/2007	Gizzard Shad	Background	1.7	779	31	0.053 J	0.81 J	1,920	0.43 J	1.0 U	877	2.5 U	0.91 J	22
GL-FI-023	6/6/2007	Gizzard Shad	Background	2.0	1,170	36	0.100 U	1.0 J	5,210	1.2 J	1.0 U	1,770	2.5 U	1.1 J	39
GL-FI-024	6/6/2007	Gizzard Shad	Background	1.5	902	29	0.048 J	0.74 J	4,010	1.1 J	0.99 U	1,560	2.5 U	0.66 J	30
GL-FI-025	6/6/2007	Gizzard Shad	Background	1.2 U	846	28	0.051 J	0.65 J	3,330	0.82 J	0.056 J	1,070	2.5 U	0.73 J	28
GL-FI-017	6/6/2007	Bluegill	Background	0.91 U	547	7.3	0.099 U	3.7 U	4,460	1.0 J	0.91 U	1,310	2.3 U	0.17 J	30
GL-FI-018	6/6/2007	Bluegill	Background	0.93	489	8.1	0.095 U	0.33 J	3,410	0.88 J	0.93 U	1,020	2.3 U	0.11 J	30

Notes:
J - Estimated value.
U - The analyte was analyzed for, but not detected.
All results are presented on a wet-weight basis.

Appendix A
Use of Hypothesis Testing and Background Screening Levels to Identify COPCs in Baseline Human Health Risk Assessment for Operable Unit 5
DePue Lake, DePue, Illinois

1.0 Introduction

Constituents of potential concern (COPCs) for the DePue Lake Baseline Human Health Risk Assessment (BHHRA) were selected (in part) based on a comparison between DePue Lake (Operable Unit 5 [OU5]) and Goose Lake datasets. The comparison to background includes the use of hypothesis testing and background screening levels (BSLs).

The methodology used for the hypothesis testing in the BHHRA was consistent with that used in the DePue Lake Remedial Investigation Report (ARCADIS 2009), which was approved by the Illinois Environmental Protection Agency (IEPA). If hypothesis testing could not be conducted on a particular dataset (e.g., due to small sample size), BSLs were used as a secondary tool in the BHHRA to compare concentrations in OU5 media to background concentrations in Goose Lake media. The results from the hypothesis testing and BSL comparison were used (in combination with screening criteria) in the BHHRA to identify COPCs that require quantitative evaluation.

Prior to hypothesis testing and the calculation of BSLs, a series of exploratory data analysis (EDA) steps and statistical analyses were conducted on the various datasets. Potential statistical outliers in the background (Goose Lake) dataset were identified as part of this process. If potential outliers were identified in the Goose Lake dataset, hypothesis testing and BSL calculations were conducted with and without outliers (as requested by the IEPA in their November 12, 2009 and January 6, 2010 comments on a BHHRA interim deliverable).

The hypothesis testing and BSL calculations were conducted separately for each medium and exposure area identified in the BHHRA. Specifically, the DePue Lake data were separated into specific exposure areas according to possible receptor patterns. The exposure areas by medium include the following:

- Soil – Floodplain Exposure Areas 1B, 1C, 2, and 3 (Figures 1 and 1A)
- Sediment – Sediment Exposure Areas 1A, 1B, 2, and lake-wide (Figure 2)
- Surface Water – Lake-wide
- Fish Fillets – Lake-wide

2.0 Exploratory Data Analysis

The objective of EDA was to ensure that the data were representative of a single population and that each observation was within a plausible range of background conditions. Consistent with statistical guidance from USEPA (2006; 2009a; 2009b), data were evaluated for statistical outliers and multiple populations prior to conducting the analysis. This assessment was largely performed with USEPA's (2009a) ProUCL version 4.00.04 software along with custom tools developed within Microsoft Excel® and

Systat Software, Inc.'s SigmaPlot®. EDA steps included box-and-whisker plots (boxplots), probability plots (i.e., quantile-quantile [Q-Q] plots), goodness-of-fit (GOF) testing, and outlier analysis.

2.1 Boxplots

A boxplot shows the 25th, 50th, and 75th percentiles as well as the mean, spread of the data, and extreme values. When data from multiple sampling areas are presented side-by-side for the same constituent, this graphic can help to determine if within-strata and between-strata locations are representative of the same background population. Boxplots can also help to identify potential outliers based on the product of the interquartile range (IQR = 75th – 25th percentiles) and a multiplier (usually 1.5 or 3.0) added to the 75th percentile. Commonly, values that exceed the 75th percentile plus 1.5 times the IQR are considered moderate outliers, whereas values that exceed 75th percentile plus 3.0 times the IQR are extreme outliers. Logarithmic transformations can sometimes provide a more convenient scaling for visual inspection when one or more datasets have extreme values. Suspected outliers were determined using the IQR approach with a multiplier of 3.0. Boxplots for both the site and background datasets are presented in Appendix C of the RI Report.

2.2 Probability Plots

Probability plots (or p-plots) serve multiple purposes in EDA for establishing background conditions. They allow for a visual inspection of the data distribution, which complements formal statistical tests for GOF. Inflection points or changes in slope can indicate that the data represent a mixture of multiple populations, which may reflect multiple background sources or a combination of background and site-related sources. Finally, p-plots can be used to identify extreme values in the upper tail of a distribution, which may be indicative of suspected outliers. The identification of potential outliers is the first step in an outlier analysis, which is an important component of EDA of background data.

Q-Q plots were generated for this analysis to evaluate fits to normal, lognormal, and gamma distributions. Q-Q plots show the quantiles of the empirical distribution versus the quantiles of the hypothesized distribution. A straight-line fit on a Q-Q plot provides evidence that the data are from a single population with the specified distribution. Q-Q plots for both the site and background datasets are presented in Appendix C of the RI Report.

2.3 Goodness-of-Fit Testing

GOF testing is performed to determine if parametric or nonparametric statistical methods are most appropriate for calculating BSLs and conducting statistical tests for outliers. Consistent with USEPA (2009a) guidance, data were evaluated for fits to normal, lognormal, and gamma distributions at an alpha level (α) of 0.05 (95% significance level). Using USEPA's (2009a) ProUCL 4 version 4.00.04 software, optimal statistical tests were applied depending on distribution and sample size (n) (e.g., normal and lognormal: Shapiro-Wilk Test for $n \leq 50$ or Lilliefors Test for $n > 50$; gamma: Kolmogorov-Smirnov Test).

GOF testing can be challenging for left-censored data (i.e., data with non-detects [NDs]). In general, methods consistent with USEPA (2009a) were employed using ProUCL 4.00.04, including evaluating distributions of detections only and using censored p-plots based on regression on order statistics (ROS) methods (i.e., extrapolation of NDs based on p-plot of uncensored data). Guidance on statistical analysis of left-censored data has evolved to reflect results of more thorough testing of the performance of

alternative approaches. USEPA (2006) summarizes the results of numerical experiments with datasets representing a wide range of censoring, sample sizes, and distribution shapes. Previously, it was commonly thought that substitution methods (e.g., using one-half the method reporting limit [MRL] for NDs, or "DL/2 method") introduced marginal bias. Based on this assumption, USEPA (2006) and other agencies previously recommended using substitution methods under conditions of moderate censoring (e.g., less than 15 to 20%). However, USEPA (2006) demonstrated through numerical experiments that the DL/2 method clearly does not provide adequate coverage for any distribution and sample size, even for censoring levels as low as 5%. Furthermore, the coverage of a confidence interval or tolerance limit (e.g., 95% interval that encloses the parameter of interest) provided by the DL/2 method deteriorates quickly as the censoring intensity increases.

For this reason, nonparametric methods are currently recommended by USEPA (2006; 2009a) for the purposes of parameter estimation. For this analysis, left-censored data were evaluated with nonparametric techniques recommended by USEPA that provide results that are robust to NDs. NDs were included at values equal to the MRL.

2.4 Outlier Analysis

Outlier analysis was initially conducted as part of the ARCADIS (2009) DePue Lake RI Report. A summary of suspected statistical outliers for both DePue Lake and Goose Lake is presented in Table 4-6 from the RI. For the purposes of hypothesis testing and BSL calculations in support of the BHHRA, no suspected outliers were removed from the DePue Lake dataset. However, as stated previously, hypothesis testing and BSLs were evaluated with and without outliers for the background (Goose Lake) dataset.

Outliers are measurements that are extremely large or small relative to the rest of the data and, therefore, are suspected of misrepresenting the population from which they were collected (USEPA 2006). A primary step in any statistical analysis of environmental data involves an evaluation of potential outliers (USEPA 2006; 2009a; 2009b). This is particularly important because summary statistics (e.g., 95/95 Upper Prediction Limits [UPLs]) can be biased by the presence of one or more outliers. Overestimates of BSLs can reduce the power of statistical tests to identify areas where concentrations are elevated above background conditions. Figure 3 provides a flow chart that was used to evaluate suspected outliers.

An outlier may represent a true extreme value from a highly variable dataset, or it may represent an erroneous measurement. When data are grouped by location and compared across samples, consistent differences in the distribution of one or more constituents within a given location may indicate that the sample is representative of a different population. A qualitative evaluation of boxplots (Appendix C of the RI Report) and p-plots (Appendix C of the RI Report) was conducted to identify a subset of "potential outliers." The boxplots illustrate values that are greater than the 75th percentile plus 1.5 times the IQR and greater than the 75th percentile plus 3.0 times the IQR. Statistical tests for outliers were also conducted to determine if there was sufficient evidence that one or more extreme values was inconsistent with the remainder of the data at a 95% significance level ($\alpha = 0.05$). If the data excluding suspected outliers were approximately normally distributed (or could be transformed to a normal distribution) and the dataset contained a low percentage of NDs (≤15%), Dixon's Test was used if $n < 25$ and Rosner's Test was used if $n \geq 25$. If the data excluding suspected outliers were not approximately normally distributed (or could not be transformed to a normal distribution) or if the dataset contained greater than 15% NDs, Walsh's Test was used if $n \geq 60$ and an IQR Test was used if $n < 60$. Note that Walsh's Test was

performed at α = 0.10 if n < 220. ROS was used to estimate ND values for parametric tests (i.e., Dixon's or Rosner's Test). ND values were set to the MRL for nonparametric tests (i.e., Walsh's Test or IQR Test). NDs identified in the upper tail of the distribution were removed to evaluate suspected outliers using nonparametric methods.

These outlier tests alone cannot determine whether a statistical outlier within a dataset should be discarded or corrected. Removing accurate data with large values and failing to remove outliers that arise from erroneous measurement are opposite kinds of errors that can both lead to a distorted estimate of summary statistics (USEPA 2006). Therefore, the decision to conduct evaluations with or without statistical outliers is based on both professional judgment and results of the statistical analysis.

The following constituents were identified as having potential outliers in Goose Lake media:

- Soil – arsenic
- Sediment – vanadium
- Surface water – no identified outliers
- Fish fillets – manganese

3.0 Hypothesis Testing

Two-sample hypothesis testing was conducted using the USEPA ProUCL version 4.00.04 (February 2009) software. The two-sample hypotheses approach is used when the site parameters (e.g., mean, shape, distribution) are being compared with the background parameters (e.g., mean, shape, distribution) (USEPA 2009a). Consistent with USEPA (2009a) guidance, hypothesis testing was used for those datasets with at least eight detected results in order to derive reliable conclusions with higher statistical power. Due to this sample size requirement (i.e., ≥ 8 detected results), hypothesis testing was limited to inorganics (metals and cyanide). BSLs were used to evaluate organics data as discussed in Section 4.

Due to non-normality of many of the distributions, nonparametric hypothesis testing methods were used to compare the Target Analyte List (TAL) metals and cyanide (e.g., Wilcoxon Rand Sum [WRS or Mann-Whitney U] test or Gehan test). In cases where both the background and site populations being tested did not include non-detect results or non-detects with multiple reporting limits, the WRS test was conducted. If one or both of the data populations contained non-detect results with multiple reporting limits, the Gehan test was conducted. The Gehan test is one of several nonparametric tests that have been proposed to test for the differences between two sites when the data sets have multiple censoring points due to differences in reporting limits (USEPA 2009a). The null hypothesis was specified with Form 2 (i.e., H0: Site ≥Background) and a delta of zero for the central tendency parameter. Use of Form 2 places the burden of proof on the dataset in order to conclude that the site concentrations are not elevated above background concentrations (USEPA 2009a).

3.1 Soil

Two-sample one-sided hypothesis testing was conducted to support the evaluation of the spatial distribution of TAL metals and cyanide and determine whether differences between the OU5 floodplain

exposure areas and background data populations are statistically significant at a 95% confidence level (alpha = 0.05). The soil groupings that were evaluated correspond to the receptor scenarios evaluated in the BHHRA. Specifically, hypothesis testing was conducted for surface soils (0 – 0.5 ft below ground surface [bgs]) and depth-weighted soils (0 – 2 ft bgs) for the following scenarios:

- Trespasser exposed to soils within Exposure Areas 1B, 1C, 2, and 3
- Utility maintenance worker exposed to soils within Exposure Area 1B
- Wildlife workers and hunters exposed to soils within Exposure Area 2

Hypothesis testing could not be conducted for the farmer exposed to agricultural soils within portions of Floodplain Exposure Areas 2 and 3 because there were less than eight detections in that dataset.

Table A-1 presents the results of the hypothesis testing for soils. Results indicate the following constituents do not show evidence of impact, i.e., do not have significantly different concentrations compared to background:

- Aluminum in surface soils and depth-weighted soils from Exposure Area 1B (receptor = trespasser)
- Aluminum, nickel, and potassium in depth-weighted soils from Exposure Area 1B (receptor = utility maintenance worker)
- Potassium in surface soils from Exposure Area 1B (receptor = trespasser)
- Nickel in depth-weighted soils from Exposure Area 1B (receptor = trespasser)

Therefore, the constituents in these exposure areas were excluded as possible COPCs.

3.2 Sediment

Two-sample one-sided hypothesis testing was conducted on each of the TAL metals to determine whether differences between the OU5 sediment exposure areas and background data populations are statistically significant at a 95% confidence level (alpha = 0.05). The sediment groupings that were evaluated correspond to the receptor scenarios evaluated in the BHHRA. Hypothesis testing was conducted for surficial sediments (0 – 0.5 ft below substrate surface [bss]) and depth-weighted sediments (0 – 2 ft bss) for the following scenarios:

- Boat angler and boater exposed to lake-wide sediments
- Village Park maintenance worker, Village Park recreational user, and shoreline angler exposed to sediments within Sediment Exposure Area 1A
- Wildlife workers and hunters exposed to sediments within Sediment Exposure Area 2

Hypothesis testing could not be conducted for the utility maintenance worker exposed to sediments within Sediment Exposure Area 1B because there were less than eight samples in that dataset.

Table A-2 presents the results of the hypothesis testing for sediments. Results indicate the following constituents do not show evidence of impact, i.e., do not have significantly different concentrations compared to background:

- Aluminum, potassium, and thallium in lake-wide surface sediments (receptors = boat angler and boater)
- Nickel in lake-wide, depth-weighted sediments (receptors = boat angler and boater)
- Aluminum, beryllium, chromium, cobalt, iron, manganese, nickel, and potassium in surface sediments from Sediment Exposure Area 1A (receptors = shoreline angler, Village Park recreational user, and Village Park maintenance worker)
- Potassium and thallium in surface sediments from Sediment Exposure Area 2 (receptor = wildlife worker and hunter)
- Nickel in depth-weighted sediments from Sediment Exposure Area 2 (receptor = wildlife worker and hunter)

Therefore, the constituents in these exposure areas were excluded as possible COPCs.

3.3 Surface Water

As shown in Table A-3, sample sizes were too low for the background dataset ($n < 8$) to use hypothesis testing to determine if differences in mean chemical concentrations for DePue Lake and Goose Lake surface water are statistically significant at a 95% confidence level (alpha = 0.05). Therefore, comparisons in the BHHRA were based on BSLs, which are discussed in Section 4 below.

3.4 Biota

Two-sample one-sided hypothesis testing was conducted on the fish fillet data to determine whether differences between distributions for DePue Lake and Goose Lake populations are statistically significant at a 95% confidence level (alpha = 0.05). Results indicate that the following constituents do not show evidence of impact, i.e., do not have significantly different concentrations compared to background (A- 4).

- Calcium, copper, iron, magnesium, selenium, and sodium in DePue Lake fish tissue

Therefore, these constituents were excluded as possible COPCs in fish tissue.

4.0 Background Screening Levels

BSLs were used as a secondary tool in the BHHRA to compare concentrations in OU5 media to background concentrations in Goose Lake media. A BSL represents a value from the distribution of background values such that the likelihood of exceeding this value, in the absence of deleterious site

effects, is low and quantifiable. The BSL identifies a value that is consistent with background conditions and is unlikely to be exceeded by site observations if, in fact, the site conditions are the same as background conditions.

A variety of statistics can be used to calculate a BSL from a background data set. Different regulatory agencies have selected different statistics for the BSL, including: maximum observation, upper percentile (e.g., 90^{th} -99^{th} percentile), upper confidence limit for the mean (e.g., 95% UCL), upper tolerance limit (e.g., 95/95 UTL), and upper prediction limit (e.g., 95 UPL). Per IEPA comments received on November 12, 2009 and January 6, 2010 on a BHHRA interim deliverable, the use of UPLs as BSLs was agreed upon in lieu of maximum concentrations for establishing background conditions. In the event a UPL could not be calculated due to insufficient data (e.g., sample size), the maximum concentration was used as the BSL. For those background datasets with potential outliers, BSLs were calculated with and without outliers.

The following table summarizes the criteria for selecting the most reliable method of UPL calculation, in accordance with USEPA (2009a) guidance, depending on sample size, degree of censoring, GOF testing results, and skewness (as determined by the standard deviation of the natural logarithm of the detections). A minimum of 8 observations and 5 detections are needed in the background dataset to calculate a 95/95 UPL (USEPA 2009a). If sufficient data are unavailable and there are no outliers, the BSL was approximated by the maximum detected concentration in the background dataset.

UPL Decision Tree (considering gamma distribution)

Sample Size	Censoring	Distribution[1]	Skewness[2]	Normality[3]	Statistic used for BSL[4]
n < 8	Detects < 8	NA	NA	NA	Maximum detect
n ≥ 8	Detects < 5	NA	NA	NA	Maximum detect
	Detects ≥ 5 ND = 0	N	NA	NA	Normal 95% UPL(t)
		N and Ln			
		N and Ln and G			
		Ln	NA	NA	Lognormal 95% UPL(t)
		G Ln and G	NA	$X^{(1/3)}$ ~ N	WH Gamma 95% UPL
		G Ln and G	NA	$X^{(1/4)}$ ~ N	HW Gamma 95% UPL
		not N, Ln or G	NA	NA	Nonparametric 95% UPL[5]
	Detects ≥ 5 ND > 0	N or Ln	Mild	NA	95% Kaplan-Meier UPL(t)
			Moderate to High	NA	Nonparametric 95% UPL[5]
		not N or Ln	NA	NA	Nonparametric 95% UPL[5]

Notes:

1. Goodness-of-fit test at α=0.05 significance level implemented with ProUCL Version 4.0 (USEPA 2009) **using detects only**. Distributions tested for normality or lognormality using Shapiro Wilk (n≤50) and Lillierfors (n>50) and for gamma distribution using Kolmogorov-Smirnov.
2. Skewness estimated using the standard deviation of the log-transformed data (detects only) (σ). Datasets with σ≤1.0 are considered mildly skewed, whereas datasets with σ>1.0 are considered moderately to highly skewed (USEPA 2009).
3. Gamma UPL selection depends on the normality of the transformed X. Compare the normality tests for $X^{(1/3)}$ and $X^{(1/4)}$ to determine if Wilson-Hilferty (WH) or Hawkins-Wixley (HW) more closely approximates the gamma UPL.
4. If the result is greater than the maximum detected concentration, then BSL = maximum detect.

5. Nonparametric 95% UPL is represented by the m^{th} order statistic X(m) where m = (n+1)*(1-α), allowing for linear interpolation between values.

The UPL was selected from among six possible methods: normal UPL, lognormal UPL, gamma UPL (either the Wilson-Hilferty or Hawkins-Wixley approximation methods), KM UPL, or nonparametric UPL. In general, normal and gamma 95/95 UPLs tend to yield the lowest values and the nonparametric UPL usually equates to the maximum detection. In addition, it is not uncommon for one of the parametric 95/95 UPLs to exceed the maximum detection in the background dataset. This is more likely when the dataset is small and/or the variance is high. The use of 95/95 UPLs in these cases introduces a source of uncertainty; for these cases the default BSL value is the maximum. Based on the above decision matrix, the calculated BSL values are shown in Tables A-1, A-2, A-3, and A-4 for soil, sediment, surface water, and fish fillets, respectively.

5.0 Summary

The information gained from the hypothesis testing and comparison of DePue Lake data to BSLs was used in the COPC screening process for the BHHRA. Final COPCs and associated rationale for inclusion or exclusion in the quantitative BHHRA are presented in the Table 2 series of the BHHRA report.

6.0 References

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Table A-1
Hypothesis Testing and Background Screening Levels - Soil
OU5 Baseline Human Health Risk Assessment
DePue Lake, DePue, Illinois

								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Farmers (2/3)	Surface Soil	Metals	Aluminum (mg/kg)	Site	7/7 (100%)	--	11,000 - 19,000	N/A	--	--	--	--	Normal 95% UPL(t)	19,000	0
				Background	10/10 (100%)	--	7,500 - 19,000								
			Antimony (mg/kg)	Site	2/7 (28.6%)	6.9 - 8.1	1.3 - 1.4	N/A	--	--	--	--	--	--	2
				Background	0/10 (0.0%)	6.5 - 10	--								
			Arsenic (mg/kg)	Site	7/7 (100%)	--	7.0 - 7.8	N/A	--	--	--	--	HW Gamma 95% UPL	18	0
				Background	10/10 (100%)	--	4.1 - 22								
			Arsenic (mg/kg)	Site	7/7 (100%)	--	7.0 - 7.8	N/A	--	--	--	--	Normal 95% UPL(t)	11	0
			No Outliers	Background	9/9 (100%)	--	4.1 - 10								
			Barium (mg/kg)	Site	7/7 (100%)	--	140 - 180	N/A	--	--	--	--	Normal 95% UPL(t)	210	0
				Background	10/10 (100%)	--	75 - 190								
			Beryllium (mg/kg)	Site	7/7 (100%)	--	0.64 - 0.98	N/A	--	--	--	--	Normal 95% UPL(t)	0.96	1
				Background	10/10 (100%)	--	0.45 - 0.96								
			Cadmium (mg/kg)	Site	7/7 (100%)	--	2.1 - 4.5	N/A	--	--	--	--	Normal 95% UPL(t)	3.3	2
				Background	10/10 (100%)	--	0.52 - 3.1								
			Calcium (mg/kg)	Site	7/7 (100%)	--	18,000 - 33,000	N/A	--	--	--	--	Normal 95% UPL(t)	40,000	0
				Background	10/10 (100%)	--	1,900 - 34,000								
			Chromium (mg/kg)	Site	7/7 (100%)	--	39 - 55	N/A	--	--	--	--	Normal 95% UPL(t)	40	6
				Background	10/10 (100%)	--	11 - 35								
			Cobalt (mg/kg)	Site	7/7 (100%)	--	7.8 - 12	N/A	--	--	--	--	Normal 95% UPL(t)	12	1
				Background	10/10 (100%)	--	7.2 - 11								
			Copper (mg/kg)	Site	7/7 (100%)	--	44 - 61	N/A	--	--	--	--	Normal 95% UPL(t)	52	2
				Background	10/10 (100%)	--	12 - 46								
			Iron (mg/kg)	Site	7/7 (100%)	--	22,000 - 29,000	N/A	--	--	--	--	Normal 95% UPL(t)	32,000	0
				Background	10/10 (100%)	--	15,000 - 29,000								
			Lead (mg/kg)	Site	7/7 (100%)	--	42 - 61	N/A	--	--	--	--	Normal 95% UPL(t)	44	5
				Background	10/10 (100%)	--	11 - 38								
			Magnesium (mg/kg)	Site	7/7 (100%)	--	9,700 - 13,000	N/A	--	--	--	--	Normal 95% UPL(t)	15,000	0
				Background	10/10 (100%)	--	1,900 - 13,000								
			Manganese (mg/kg)	Site	7/7 (100%)	--	590 - 730	N/A	--	--	--	--	Normal 95% UPL(t)	930	0
				Background	10/10 (100%)	--	370 - 850								
			Mercury (mg/kg)	Site	7/7 (100%)	--	0.17 - 0.25	N/A	--	--	--	--	Nonparametric 95% UPL	0.22	4
				Background	5/10 (50.0%)	0.11 - 0.18	0.069 - 0.22								
			Nickel (mg/kg)	Site	7/7 (100%)	--	27 - 36	N/A	--	--	--	--	Nonparametric 95% UPL	33	2
				Background	10/10 (100%)	--	14 - 33								
			Potassium (mg/kg)	Site	7/7 (100%)	--	1,700 - 2,800	N/A	--	--	--	--	Normal 95% UPL(t)	2,800	0
				Background	10/10 (100%)	--	940 - 2,400								
			Selenium (mg/kg)	Site	7/7 (100%)	--	1.1 - 1.5	N/A	--	--	--	--	--	--	7
				Background	0/10 (0.0%)	3.8 - 5.9	--								
			Silver (mg/kg)	Site	7/7 (100%)	--	0.92 - 1.2	N/A	--	--	--	--	Nonparametric 95% UPL	1.7	0
				Background	6/10 (60.0%)	1.1 - 1.7	0.13 - 0.81								
			Sodium (mg/kg)	Site	3/7 (42.9%)	570 - 670	140 - 150	N/A	--	--	--	--	Nonparametric 95% UPL	710	0
				Background	6/10 (60.0%)	540 - 710	200 - 230								
			Thallium (mg/kg)	Site	0/7 (0.0%)	2.9 - 3.4	--	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	1.2	0
				Background	9/10 (90.0%)	2.7	0.61 - 1.1								
			Vanadium (mg/kg)	Site	7/7 (100%)	--	24 - 36	N/A	--	--	--	--	Normal 95% UPL(t)	40	0
				Background	10/10 (100%)	--	21 - 42								
			Zinc (mg/kg)	Site	7/7 (100%)	--	190 - 1,200	N/A	--	--	--	--	Normal 95% UPL(t)	220	2
				Background	10/10 (100%)	--	42 - 200								
	Depth-weighted Soil (0-2 ft)	Metals	Aluminum (mg/kg)	Site	7/7 (100%)	--	12,000 - 20,000	N/A	--	--	--	--	Normal 95% UPL(t)	19,000	1
				Background	10/10 (100%)	--	8,800 - 17,000								
			Antimony (mg/kg)	Site	2/7 (28.6%)	7.1 - 8.3	1.5 - 5.8	N/A	--	--	--	--	--	--	2
				Background	0/10 (0.0%)	6.8 - 10	--								
			Arsenic (mg/kg)	Site	7/7 (100%)	--	7.8 - 9.3	N/A	--	--	--	--	Normal 95% UPL(t)	14	0
				Background	10/10 (100%)	--	4.2 - 14								
			Arsenic (mg/kg)	Site	7/7 (100%)	--	7.8 - 9.3	N/A	--	--	--	--	Normal 95% UPL(t)	13	0
			No Outliers	Background	9/9 (100%)	--	4.2 - 14								
			Barium (mg/kg)	Site	7/7 (100%)	--	160 - 210	N/A	--	--	--	--	Normal 95% UPL(t)	220	0
				Background	10/10 (100%)	--	81 - 200								
			Beryllium (mg/kg)	Site	7/7 (100%)	--	0.74 - 1.0	N/A	--	--	--	--	Normal 95% UPL(t)	0.92	1
				Background	10/10 (100%)	--	0.49 - 0.87								
			Cadmium (mg/kg)	Site	7/7 (100%)	--	3.4 - 8.9	N/A	--	--	--	--	HW Gamma 95% UPL	6.0	4
				Background	10/10 (100%)	--	0.56 - 5.4								
			Calcium (mg/kg)	Site	7/7 (100%)	--	14,000 - 28,000	N/A	--	--	--	--	Normal 95% UPL(t)	36,000	0
				Background	10/10 (100%)	--	1,900 - 32,000								

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								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Farmers (2/3)	Depth-weighted Soil (0-2 ft)	Metals	Chromium (mg/kg)	Site	7/7 (100%)	--	54 - 82	N/A	--	--	--	--	Normal 95% UPL(t)	58	6
				Background	10/10 (100%)	--	13 - 60								
			Cobalt (mg/kg)	Site	7/7 (100%)	--	8.0 - 10	N/A	--	--	--	--	HW Gamma 95% UPL	12	0
				Background	10/10 (100%)	--	8.1 - 13								
			Copper (mg/kg)	Site	7/7 (100%)	--	61 - 75	N/A	--	--	--	--	Normal 95% UPL(t)	63	5
				Background	10/10 (100%)	--	13 - 60								
			Iron (mg/kg)	Site	7/7 (100%)	--	23,000 - 29,000	N/A	--	--	--	--	Normal 95% UPL(t)	32,000	0
				Background	10/10 (100%)	--	15,000 - 29,000								
			Lead (mg/kg)	Site	7/7 (100%)	--	56 - 81	N/A	--	--	--	--	Normal 95% UPL(t)	61	6
				Background	10/10 (100%)	--	10 - 62								
			Magnesium (mg/kg)	Site	7/7 (100%)	--	8,000 - 12,000	N/A	--	--	--	--	Normal 95% UPL(t)	14,000	0
				Background	10/10 (100%)	--	2,300 - 12,000								
			Manganese (mg/kg)	Site	7/7 (100%)	--	540 - 770	N/A	--	--	--	--	Normal 95% UPL(t)	970	0
				Background	10/10 (100%)	--	450 - 930								
			Mercury (mg/kg)	Site	7/7 (100%)	--	0.28 - 0.41	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	0.34	3
				Background	6/10 (60.0%)	0.12 - 0.17	0.095 - 0.33								
			Nickel (mg/kg)	Site	7/7 (100%)	--	34 - 42	N/A	--	--	--	--	Normal 95% UPL(t)	39	3
				Background	10/10 (100%)	--	16 - 39								
			Potassium (mg/kg)	Site	7/7 (100%)	--	1,600 - 2,500	N/A	--	--	--	--	Normal 95% UPL(t)	2,600	0
				Background	10/10 (100%)	--	1,100 - 2,400								
			Selenium (mg/kg)	Site	7/7 (100%)	--	1.0 - 1.4	N/A	--	--	--	--	--	--	7
				Background	0/10 (0.0%)	4.0 - 5.7	--								
			Silver (mg/kg)	Site	7/7 (100%)	--	1.1 - 1.9	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	1.6	2
				Background	7/10 (70.0%)	1.1 - 1.4	0.13 - 1.4								
			Sodium (mg/kg)	Site	3/7 (42.9%)	590 - 690	160 - 490	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	710	0
				Background	8/10 (80.0%)	560 - 600	200 - 650								
			Thallium (mg/kg)	Site	0/7 (0.0%)	3.0 - 3.4	--	N/A	--	--	--	--	Nonparametric 95% UPL	3.0	0
				Background	9/10 (90.0%)	2.9	0.62 - 3.0								
			Vanadium (mg/kg)	Site	7/7 (100%)	--	26 - 39	N/A	--	--	--	--	Normal 95% UPL(t)	39	1
				Background	10/10 (100%)	--	22 - 40								
			Zinc (mg/kg)	Site	7/7 (100%)	--	240 - 690	N/A	--	--	--	--	Normal 95% UPL(t)	280	6
				Background	10/10 (100%)	--	46 - 290								
Trespasser (1B)	Surface Soil	Metals	Aluminum (mg/kg)	Site	10/10 (100%)	--	7,500 - 14,000	WMW Test (w/out NDs)	26.5	28	< 0.05	No	Normal 95% UPL(t)	19,000	0
				Background	10/10 (100%)	--	7,500 - 19,000								
			Antimony (mg/kg)	Site	3/8 (37.5%)	12 - 20	0.78 - 5.8	N/A	--	--	--	--	--	--	3
				Background	0/10 (0.0%)	6.5 - 10	--								
			Arsenic (mg/kg)	Site	10/10 (100%)	--	5.4 - 390	WMW Test (w/out NDs)	87	28	0.998	Yes	HW Gamma 95% UPL	18	8
				Background	10/10 (100%)	--	4.1 - 22								
			Arsenic (mg/kg)	Site	10/10 (100%)	--	5.4 - 390	WMW Test (w/out NDs)					Normal 95% UPL(t)	11	9
			No Outliers	Background	9/9 (100%)	--	4.1 - 10								
			Barium (mg/kg)	Site	10/10 (100%)	--	300 - 8,000	WMW Test (w/out NDs)	100	28	1	Yes	Normal 95% UPL(t)	210	10
				Background	10/10 (100%)	--	75 - 190								
			Beryllium (mg/kg)	Site	10/10 (100%)	--	0.56 - 1.0	WMW Test (w/out NDs)	57	28	0.715	Yes	Normal 95% UPL(t)	0.96	1
				Background	10/10 (100%)	--	0.45 - 0.96								
			Cadmium (mg/kg)	Site	10/10 (100%)	--	37 - 2,500	WMW Test (w/out NDs)	100	28	1	Yes	Normal 95% UPL(t)	3.3	10
				Background	10/10 (100%)	--	0.52 - 3.1								
			Calcium (mg/kg)	Site	10/10 (100%)	--	17,000 - 95,000	WMW Test (w/out NDs)	80	28	0.989	Yes	Normal 95% UPL(t)	40,000	4
				Background	10/10 (100%)	--	1,900 - 34,000								
			Chromium (mg/kg)	Site	8/10 (80.0%)	19 - 20	19 - 37	Gehan Test	-0.646	-1.645	0.259	Yes	Normal 95% UPL(t)	40	0
				Background	10/10 (100%)	--	11 - 35								
			Cobalt (mg/kg)	Site	10/10 (100%)	--	7.5 - 19	WMW Test (w/out NDs)	79	28	0.987	Yes	Normal 95% UPL(t)	12	6
				Background	10/10 (100%)	--	7.2 - 11								
			Copper (mg/kg)	Site	10/10 (100%)	--	150 - 2,200	WMW Test (w/out NDs)	100	28	1	Yes	Normal 95% UPL(t)	52	10
				Background	10/10 (100%)	--	12 - 46								
			Cyanide (mg/kg)	Site	2/2 (100%)	--	0.94 - 2.6	N/A	--	--	--	--	Maximum Detect	0.87	2
				Background	1/10 (10.0%)	2.9 - 4.4	0.87								
			Iron (mg/kg)	Site	10/10 (100%)	--	18,000 - 50,000	WMW Test (w/out NDs)	71	28	0.948	Yes	Normal 95% UPL(t)	32,000	4
				Background	10/10 (100%)	--	15,000 - 29,000								
			Lead (mg/kg)	Site	10/10 (100%)	--	110 - 13,000	WMW Test (w/out NDs)	100	28	1	Yes	Normal 95% UPL(t)	44	10
				Background	10/10 (100%)	--	11 - 38								
			Magnesium (mg/kg)	Site	10/10 (100%)	--	3,800 - 15,000	WMW Test (w/out NDs)	45	28	0.367	Yes	Normal 95% UPL(t)	15,000	0
				Background	10/10 (100%)	--	1,900 - 13,000								
			Manganese (mg/kg)	Site	10/10 (100%)	--	360 - 1,600	WMW Test (w/out NDs)	71	28	0.948	Yes	Normal 95% UPL(t)	930	3
				Background	10/10 (100%)	--	370 - 850								

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								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Trespasser (1B)	Surface Soil	Metals	Mercury (mg/kg)	Site	10/10 (100%)	--	0.19 - 6.8	N/A	--	--	--	--	Nonparametric 95% UPL	0.22	8
				Background	5/10 (50.0%)	0.11 - 0.18	0.069 - 0.22								
			Nickel (mg/kg)	Site	10/10 (100%)	--	17 - 35	WMW Test (w/out NDs)	55	28	0.661	Yes	Nonparametric 95% UPL	33	1
				Background	10/10 (100%)	--	14 - 33								
			Potassium (mg/kg)	Site	10/10 (100%)	--	1,100 - 2,100	WMW Test (w/out NDs)	26	28	< 0.05	No	Normal 95% UPL(t)	2,800	0
				Background	10/10 (100%)	--	940 - 2,400								
			Selenium (mg/kg)	Site	10/10 (100%)	--	2.6 - 14	N/A	--	--	--	--	--	--	10
				Background	0/10 (0.0%)	3.8 - 5.9	--								
			Silver (mg/kg)	Site	10/10 (100%)	--	0.58 - 69	N/A	--	--	--	--	Nonparametric 95% UPL	1.7	8
				Background	6/10 (60.0%)	1.1 - 1.7	0.13 - 0.81								
			Sodium (mg/kg)	Site	4/10 (40.0%)	700 - 16,000	780 - 5,000	N/A	--	--	--	--	Nonparametric 95% UPL	710	4
				Background	6/10 (60.0%)	540 - 710	200 - 230								
			Thallium (mg/kg)	Site	4/10 (40.0%)	4.6 - 8.9	0.58 - 1.6	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	1.2	1
				Background	9/10 (90.0%)	2.7	0.61 - 1.1								
			Vanadium (mg/kg)	Site	10/10 (100%)	--	22 - 35	WMW Test (w/out NDs)	61	28	0.808	Yes	Normal 95% UPL(t)	40	0
				Background	10/10 (100%)	--	21 - 42								
			Zinc (mg/kg)	Site	10/10 (100%)	--	3,400 - 150,000	WMW Test (w/out NDs)	100	28	1	Yes	Normal 95% UPL(t)	220	10
				Background	10/10 (100%)	--	42 - 200								
		Miscellaneous-SPLP	Fluoride (mg/L)	Site	2/2 (100%)	--	0.57 - 1.5	N/A	--	--	--	--	Normal 95% UPL(t)	0.71	1
				Background	10/10 (100%)	--	0.40 - 0.71								
		PCBs	Aroclor 1016 (mg/kg)	Site	0/2 (0.0%)	0.055 - 0.065	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.038 - 0.058	--								
			Aroclor 1221 (mg/kg)	Site	0/2 (0.0%)	0.11 - 0.13	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.078 - 0.12	--								
			Aroclor 1232 (mg/kg)	Site	0/2 (0.0%)	0.055 - 0.065	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.038 - 0.058	--								
			Aroclor 1242 (mg/kg)	Site	0/2 (0.0%)	0.055 - 0.065	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.038 - 0.058	--								
			Aroclor 1248 (mg/kg)	Site	0/2 (0.0%)	0.055 - 0.065	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.038 - 0.058	--								
			Aroclor 1254 (mg/kg)	Site	1/1 (100%)	--	0.15	N/A	--	--	--	--	Maximum Detect	0.044	1
				Background	3/10 (30.0%)	0.038 - 0.058	0.018 - 0.044								
			Aroclor 1260 (mg/kg)	Site	0/2 (0.0%)	0.055 - 0.065	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.038 - 0.058	--								
			Total PCBs (mg/kg)	Site	1/2 (50.0%)	0.11	0.15	N/A	--	--	--	--	Maximum Detect	0.044	1
				Background	3/10 (30.0%)	0.078 - 0.12	0.018 - 0.044								
		Pesticides/Herbicides	4,4'-DDD (ug/kg)	Site	0/2 (0.0%)	5.5 - 6.5	--	N/A	--	--	--	--	Maximum Detect	1.5	0
				Background	1/10 (10.0%)	3.8 - 5.8	1.5								
			4,4'-DDE (ug/kg)	Site	0/2 (0.0%)	5.5 - 6.5	--	N/A	--	--	--	--	Maximum Detect	2.3	0
				Background	4/10 (40.0%)	3.8 - 5.8	1.1 - 2.3								
			4,4'-DDT (ug/kg)	Site	1/2 (50.0%)	6.5	10	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	3.8 - 5.8	--								
			Aldrin (ug/kg)	Site	0/2 (0.0%)	2.8 - 3.3	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 3.0	--								
			Alpha-BHC (ug/kg)	Site	0/2 (0.0%)	2.8 - 3.3	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 3.0	--								
			Alpha-Chlordane (ug/kg)	Site	0/2 (0.0%)	2.8 - 3.3	--	N/A	--	--	--	--	Maximum Detect	3.9	0
				Background	3/10 (30.0%)	2.0 - 2.9	0.68 - 3.9								
			Beta-BHC (ug/kg)	Site	0/2 (0.0%)	2.8 - 3.3	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 3.0	--								
			delta-BHC (ug/kg)	Site	0/2 (0.0%)	2.8 - 3.3	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 3.0	--								
			Dieldrin (ug/kg)	Site	1/2 (50.0%)	5.5	8.8	N/A	--	--	--	--	Nonparametric 95% UPL	5.8	1
				Background	7/10 (70.0%)	3.8 - 5.8	1.3 - 4.6								
			Endosulfan I (ug/kg)	Site	0/2 (0.0%)	2.8 - 3.3	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 3.0	--								
			Endosulfan II (ug/kg)	Site	0/2 (0.0%)	5.5 - 6.5	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	3.8 - 5.8	--								
			Endosulfan sulfate (ug/kg)	Site	0/2 (0.0%)	5.5 - 6.5	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	3.8 - 5.8	--								
			Endrin (ug/kg)	Site	0/2 (0.0%)	5.5 - 6.5	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	3.8 - 5.8	--								
			Endrin aldehyde (ug/kg)	Site	0/2 (0.0%)	5.5 - 6.5	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	3.8 - 5.8	--								

Table A-1
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OU5 Baseline Human Health Risk Assessment
DePue Lake, DePue, Illinois

								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Trespasser (1B)	Surface Soil	Pesticides/Herbicides	Endrin ketone (ug/kg)	Site	1/2 (50.0%)	6.5	6.4	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	3.8 - 5.8	--								
			gamma-BHC (Lindane) (ug/kg)	Site	0/2 (0.0%)	2.8 - 3.3	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 3.0	--								
			gamma-Chlordane (ug/kg)	Site	0/2 (0.0%)	2.8 - 3.3	--	N/A	--	--	--	--	Nonparametric 95% UPL	2.9	0
				Background	5/10 (50.0%)	2.0 - 2.9	0.75 - 1.5								
			Heptachlor (ug/kg)	Site	0/2 (0.0%)	2.8 - 3.3	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 3.0	--								
			Heptachlor epoxide (ug/kg)	Site	0/2 (0.0%)	2.8 - 3.3	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 3.0	--								
			Methoxychlor (ug/kg)	Site	0/2 (0.0%)	28 - 33	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	20 - 30	--								
			Toxaphene (ug/kg)	Site	0/2 (0.0%)	280 - 330	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	200 - 300	--								
		SVOCs	Acenaphthene (mg/kg)	Site	0/2 (0.0%)	0.65 - 1.1	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.38 - 0.58	--								
			Acenaphthylene (mg/kg)	Site	0/2 (0.0%)	0.65 - 1.1	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.38 - 0.58	--								
			Anthracene (mg/kg)	Site	0/2 (0.0%)	0.65 - 1.1	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.38 - 0.58	--								
			Benzo(a)anthracene (mg/kg)	Site	2/2 (100%)	--	0.22 - 0.76	N/A	--	--	--	--	Maximum Detect	0.17	2
				Background	1/10 (10.0%)	0.38 - 0.58	0.17								
			Benzo(a)pyrene (mg/kg)	Site	2/2 (100%)	--	0.26 - 0.95	N/A	--	--	--	--	Maximum Detect	0.17	2
				Background	1/10 (10.0%)	0.38 - 0.58	0.17								
			Benzo(b)fluoranthene (mg/kg)	Site	2/2 (100%)	--	0.34 - 1.2	N/A	--	--	--	--	Maximum Detect	0.25	2
				Background	1/10 (10.0%)	0.38 - 0.58	0.25								
			Benzo(g,h,i)perylene (mg/kg)	Site	2/2 (100%)	--	0.17 - 0.37	N/A	--	--	--	--	--	--	2
				Background	0/10 (0.0%)	0.38 - 0.58	--								
			Benzo(k)fluoranthene (mg/kg)	Site	2/2 (100%)	--	0.25 - 0.90	N/A	--	--	--	--	Maximum Detect	0.20	2
				Background	1/10 (10.0%)	0.38 - 0.58	0.20								
			Chrysene (mg/kg)	Site	2/2 (100%)	--	0.33 - 1.3	N/A	--	--	--	--	Maximum Detect	0.25	2
				Background	1/10 (10.0%)	0.38 - 0.58	0.25								
			Dibenz(a,h)anthracene (mg/kg)	Site	1/2 (50.0%)	0.65	0.35	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	0.38 - 0.58	--								
			Fluoranthene (mg/kg)	Site	2/2 (100%)	--	0.56 - 1.8	N/A	--	--	--	--	Maximum Detect	0.20	2
				Background	1/10 (10.0%)	0.38 - 0.58	0.20								
			Fluorene (mg/kg)	Site	0/2 (0.0%)	0.65 - 1.1	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.38 - 0.58	--								
			Indeno(1,2,3-cd)pyrene (mg/kg)	Site	2/2 (100%)	--	0.22 - 0.65	N/A	--	--	--	--	Maximum Detect	0.15	2
				Background	1/10 (10.0%)	0.38 - 0.58	0.15								
			Naphthalene (mg/kg)	Site	0/2 (0.0%)	0.65 - 1.1	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.38 - 0.58	--								
			Phenanthrene (mg/kg)	Site	2/2 (100%)	--	0.24 - 1.6	N/A	--	--	--	--	--	--	2
				Background	0/10 (0.0%)	0.38 - 0.58	--								
			Pyrene (mg/kg)	Site	2/2 (100%)	--	0.44 - 1.5	N/A	--	--	--	--	Maximum Detect	0.25	2
				Background	1/10 (10.0%)	0.38 - 0.58	0.25								
			Total PAHs (mg/kg)	Site	2/2 (100%)	--	3.0 - 11	N/A	--	--	--	--	Maximum Detect	1.6	2
				Background	1/10 (10.0%)	0.38 - 0.58	1.6								
	Depth-weighted Soil (0-2 ft)	Metals	Aluminum (mg/kg)	Site	8/8 (100%)	--	6,200 - 13,000	WMW Test (w/out NDs)	19	21	< 0.05	No	Normal 95% UPL(t)	19,000	0
				Background	10/10 (100%)	--	8,800 - 17,000								
			Antimony (mg/kg)	Site	5/7 (71.4%)	11 - 16	0.83 - 670	N/A	--	--	--	--	--	--	5
				Background	0/10 (0.0%)	6.8 - 10	--								
			Arsenic (mg/kg)	Site	8/8 (100%)	--	12 - 190	WMW Test (w/out NDs)	76	21	0.999	Yes	Normal 95% UPL(t)	14	6
				Background	10/10 (100%)	--	4.2 - 14								
			Arsenic (mg/kg)	Site	8/8 (100%)	--	12 - 190	WMW Test (w/out NDs)					Normal 95% UPL(t)	13	6
			No Outliers	Background	9/9 (100%)	--	4.2 - 14								
			Barium (mg/kg)	Site	8/8 (100%)	--	620 - 5,200	WMW Test (w/out NDs)	80	21	1	Yes	Normal 95% UPL(t)	220	8
				Background	10/10 (100%)	--	81 - 200								
			Beryllium (mg/kg)	Site	8/8 (100%)	--	0.46 - 0.95	WMW Test (w/out NDs)	44	21	0.655	Yes	Normal 95% UPL(t)	0.92	1
				Background	10/10 (100%)	--	0.49 - 0.87								
			Cadmium (mg/kg)	Site	8/8 (100%)	--	13 - 1,600	WMW Test (w/out NDs)	80	21	1	Yes	HW Gamma 95% UPL	6.0	8
				Background	10/10 (100%)	--	0.56 - 5.4								
			Calcium (mg/kg)	Site	8/8 (100%)	--	16,000 - 150,000	WMW Test (w/out NDs)	67	21	0.993	Yes	Normal 95% UPL(t)	36,000	3
				Background	10/10 (100%)	--	1,900 - 32,000								

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								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Trespasser (1B)	Depth-weighted Soil (0-2 ft)	Metals	Chromium (mg/kg)	Site	7/8 (87.5%)	17	14 - 49	N/A	--	--	--	--	Normal 95% UPL(t)	58	0
				Background	10/10 (100%)	--	13 - 60								
			Cobalt (mg/kg)	Site	8/8 (100%)	--	7.8 - 31	WMW Test (w/out NDs)	54	21	0.901	Yes	HW Gamma 95% UPL	12	4
				Background	10/10 (100%)	--	8.1 - 13								
			Copper (mg/kg)	Site	8/8 (100%)	--	52 - 2,800	WMW Test (w/out NDs)	79	21	1	Yes	Normal 95% UPL(t)	63	7
				Background	10/10 (100%)	--	13 - 60								
			Cyanide (mg/kg)	Site	2/2 (100%)	--	7.2 - 25	N/A	--	--	--	--	Maximum Detect	3.1	2
				Background	1/10 (10.0%)	2.9 - 4.2	3.1								
			Iron (mg/kg)	Site	8/8 (100%)	--	25,000 - 56,000	WMW Test (w/out NDs)	77	21	1	Yes	Normal 95% UPL(t)	32,000	7
				Background	10/10 (100%)	--	15,000 - 29,000								
			Lead (mg/kg)	Site	8/8 (100%)	--	110 - 8,900	WMW Test (w/out NDs)	80	21	1	Yes	Normal 95% UPL(t)	61	8
				Background	10/10 (100%)	--	10 - 62								
			Magnesium (mg/kg)	Site	8/8 (100%)	--	4,300 - 15,000	WMW Test (w/out NDs)	40	21	0.518	Yes	Normal 95% UPL(t)	14,000	1
				Background	10/10 (100%)	--	2,300 - 12,000								
			Manganese (mg/kg)	Site	8/8 (100%)	--	300 - 1,400	WMW Test (w/out NDs)	48	21	0.775	Yes	Normal 95% UPL(t)	970	2
				Background	10/10 (100%)	--	450 - 930								
			Mercury (mg/kg)	Site	8/8 (100%)	--	0.26 - 14	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	0.34	7
				Background	6/10 (60.0%)	0.12 - 0.17	0.095 - 0.33								
			Nickel (mg/kg)	Site	8/8 (100%)	--	16 - 27	WMW Test (w/out NDs)	18	21	< 0.05	No	Normal 95% UPL(t)	39	0
				Background	10/10 (100%)	--	16 - 39								
			Potassium (mg/kg)	Site	8/8 (100%)	--	790 - 1,900	WMW Test (w/out NDs)	21	21	0.0501	Yes	Normal 95% UPL(t)	2,600	0
				Background	10/10 (100%)	--	1,100 - 2,400								
			Selenium (mg/kg)	Site	8/8 (100%)	--	1.8 - 36	N/A	--	--	--	--	--	--	8
				Background	0/10 (0.0%)	4.0 - 5.7	--								
			Silver (mg/kg)	Site	8/8 (100%)	--	0.66 - 49	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	1.6	7
				Background	7/10 (70.0%)	1.1 - 1.4	0.13 - 1.4								
			Sodium (mg/kg)	Site	3/8 (37.5%)	830 - 6,000	470 - 9,400	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	710	2
				Background	8/10 (80.0%)	560 - 600	200 - 650								
			Thallium (mg/kg)	Site	5/8 (62.5%)	4.6 - 8.1	1.4 - 2.5	N/A	--	--	--	--	Nonparametric 95% UPL	3.0	0
				Background	9/10 (90.0%)	2.9	0.62 - 3.0								
			Vanadium (mg/kg)	Site	8/8 (100%)	--	22 - 35	WMW Test (w/out NDs)	52	21	0.867	Yes	Normal 95% UPL(t)	39	0
				Background	10/10 (100%)	--	22 - 40								
			Zinc (mg/kg)	Site	8/8 (100%)	--	1,000 - 150,000	WMW Test (w/out NDs)	80	21	1	Yes	Normal 95% UPL(t)	280	8
				Background	10/10 (100%)	--	46 - 290								
		Miscellaneous-SPLP	Fluoride (mg/L)	Site	2/2 (100%)	--	0.48 - 2.9	N/A	--	--	--	--	Normal 95% UPL(t)	0.87	1
				Background	10/10 (100%)	--	0.24 - 0.85								
		PCBs	Aroclor 1016 (mg/kg)	Site	0/2 (0.0%)	0.039 - 0.11	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.039 - 0.055	--								
			Aroclor 1221 (mg/kg)	Site	0/2 (0.0%)	0.078 - 0.22	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.079 - 0.11	--								
			Aroclor 1232 (mg/kg)	Site	0/2 (0.0%)	0.039 - 0.11	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.039 - 0.055	--								
			Aroclor 1242 (mg/kg)	Site	0/2 (0.0%)	0.039 - 0.11	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.039 - 0.055	--								
			Aroclor 1248 (mg/kg)	Site	0/2 (0.0%)	0.039 - 0.11	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.039 - 0.055	--								
			Aroclor 1254 (mg/kg)	Site	2/2 (100%)	--	0.053 - 0.072	N/A	--	--	--	--	Maximum Detect	0.064	1
				Background	3/10 (30.0%)	0.039 - 0.055	0.029 - 0.064								
			Aroclor 1260 (mg/kg)	Site	0/2 (0.0%)	0.039 - 0.11	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.039 - 0.055	--								
			Total PCBs (mg/kg)	Site	2/2 (100%)	--	0.067 - 0.072	N/A	--	--	--	--	Maximum Detect	0.064	2
				Background	3/10 (30.0%)	0.079 - 0.11	0.029 - 0.064								
		Pesticides/Herbicides	4,4'-DDD (ug/kg)	Site	1/2 (50.0%)	11	5.7	N/A	--	--	--	--	Maximum Detect	4.1	1
				Background	3/10 (30.0%)	3.9 - 5.5	2.1 - 4.1								
			4,4'-DDE (ug/kg)	Site	0/2 (0.0%)	3.9 - 11	--	N/A	--	--	--	--	Maximum Detect	4.3	0
				Background	4/10 (40.0%)	3.9 - 5.5	1.1 - 4.3								
			4,4'-DDT (ug/kg)	Site	2/2 (100%)	--	5.9 - 9.4	N/A	--	--	--	--	--	--	2
				Background	0/10 (0.0%)	3.9 - 5.5	--								
			Aldrin (ug/kg)	Site	0/2 (0.0%)	2.0 - 5.6	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 2.9	--								
			Alpha-BHC (ug/kg)	Site	0/2 (0.0%)	2.0 - 5.6	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 2.9	--								
			Alpha-Chlordane (ug/kg)	Site	0/2 (0.0%)	2.0 - 5.6	--	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	2.7	0
				Background	5/10 (50.0%)	2.0 - 2.7	0.73 - 3.1								

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								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Trespasser (1B)	Depth-weighted Soil (0-2 ft)	Pesticides/Herbicides	Beta-BHC (ug/kg)	Site	0/2 (0.0%)	2.0 - 5.6	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 2.9	--								
			delta-BHC (ug/kg)	Site	0/2 (0.0%)	2.0 - 5.6	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 2.9	--								
			Dieldrin (ug/kg)	Site	2/2 (100%)	--	4.6 - 4.7	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	5.3	0
				Background	7/10 (70.0%)	3.9 - 5.5	2.7 - 5.1								
			Endosulfan I (ug/kg)	Site	0/2 (0.0%)	2.0 - 5.6	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 2.9	--								
			Endosulfan II (ug/kg)	Site	0/2 (0.0%)	3.9 - 11	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	3.9 - 5.5	--								
			Endosulfan sulfate (ug/kg)	Site	0/2 (0.0%)	3.9 - 11	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	3.9 - 5.5	--								
			Endrin (ug/kg)	Site	1/2 (50.0%)	11	4.8	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	3.9 - 5.5	--								
			Endrin aldehyde (ug/kg)	Site	0/2 (0.0%)	3.9 - 11	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	3.9 - 5.5	--								
			Endrin ketone (ug/kg)	Site	1/2 (50.0%)	11	5.9	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	3.9 - 5.5	--								
			gamma-BHC (Lindane) (ug/kg)	Site	0/2 (0.0%)	2.0 - 5.6	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 2.9	--								
			gamma-Chlordane (ug/kg)	Site	0/2 (0.0%)	2.0 - 5.6	--	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	2.8	0
				Background	5/10 (50.0%)	2.0 - 2.7	0.74 - 2.9								
			Heptachlor (ug/kg)	Site	0/2 (0.0%)	2.0 - 5.6	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 2.9	--								
			Heptachlor epoxide (ug/kg)	Site	0/2 (0.0%)	2.0 - 5.6	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 2.9	--								
			Methoxychlor (ug/kg)	Site	1/2 (50.0%)	56	22	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	20 - 29	--								
			Toxaphene (ug/kg)	Site	0/2 (0.0%)	200 - 560	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	200 - 290	--								
		SVOCs	Acenaphthene (mg/kg)	Site	0/2 (0.0%)	0.77 - 1.1	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.39 - 0.55	--								
			Acenaphthylene (mg/kg)	Site	0/2 (0.0%)	0.77 - 1.1	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.39 - 0.55	--								
			Anthracene (mg/kg)	Site	1/2 (50.0%)	1.1	0.40	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	0.39 - 0.55	--								
			Benzo(a)anthracene (mg/kg)	Site	2/2 (100%)	--	0.48 - 0.96	N/A	--	--	--	--	Maximum Detect	0.41	2
				Background	3/10 (30.0%)	0.39 - 0.55	0.21 - 0.41								
			Benzo(a)pyrene (mg/kg)	Site	2/2 (100%)	--	0.40 - 0.97	N/A	--	--	--	--	Maximum Detect	0.41	1
				Background	3/10 (30.0%)	0.39 - 0.55	0.20 - 0.41								
			Benzo(b)fluoranthene (mg/kg)	Site	2/2 (100%)	--	0.56 - 0.99	N/A	--	--	--	--	Maximum Detect	0.25	2
				Background	3/10 (30.0%)	0.39 - 0.55	0.15 - 0.25								
			Benzo(g,h,i)perylene (mg/kg)	Site	2/2 (100%)	--	0.59 - 0.94	N/A	--	--	--	--	Maximum Detect	0.23	2
				Background	1/10 (10.0%)	0.39 - 0.55	0.23								
			Benzo(k)fluoranthene (mg/kg)	Site	2/2 (100%)	--	0.40 - 0.96	N/A	--	--	--	--	Maximum Detect	0.23	2
				Background	3/10 (30.0%)	0.39 - 0.55	0.13 - 0.23								
			Chrysene (mg/kg)	Site	2/2 (100%)	--	0.69 - 0.98	N/A	--	--	--	--	Maximum Detect	0.26	2
				Background	3/10 (30.0%)	0.39 - 0.55	0.16 - 0.26								
			Dibenz(a,h)anthracene (mg/kg)	Site	1/2 (50.0%)	1.1	0.58	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	0.39 - 0.55	--								
			Fluoranthene (mg/kg)	Site	2/2 (100%)	--	0.33 - 1.1	N/A	--	--	--	--	Maximum Detect	0.23	2
				Background	3/10 (30.0%)	0.39 - 0.55	0.13 - 0.23								
			Fluorene (mg/kg)	Site	1/2 (50.0%)	1.1	0.39	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	0.39 - 0.55	--								
			Indeno(1,2,3-cd)pyrene (mg/kg)	Site	2/2 (100%)	--	0.66 - 0.96	N/A	--	--	--	--	Maximum Detect	0.41	2
				Background	3/10 (30.0%)	0.39 - 0.55	0.20 - 0.41								
			Naphthalene (mg/kg)	Site	1/2 (50.0%)	1.1	0.53	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	0.39 - 0.55	--								
			Phenanthrene (mg/kg)	Site	2/2 (100%)	--	0.96 - 1.2	N/A	--	--	--	--	--	--	2
				Background	0/10 (0.0%)	0.39 - 0.55	--								
			Pyrene (mg/kg)	Site	2/2 (100%)	--	0.87 - 1.0	N/A	--	--	--	--	Maximum Detect	0.27	2
				Background	3/10 (30.0%)	0.39 - 0.55	0.17 - 0.27								
			Total PAHs (mg/kg)	Site	2/2 (100%)	--	0.95 - 6.6	N/A	--	--	--	--	Maximum Detect	1.2	1
				Background	3/10 (30.0%)	0.39 - 0.55	0.87 - 1.2								

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DePue Lake, DePue, Illinois

								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Trespasser (1C)	Surface Soil	Metals	Aluminum (mg/kg)	Site	29/29 (100%)	--	2,100 - 29,000	WMW Test (w/out NDs)	1.447	-1.645	0.926	Yes	Normal 95% UPL(t)	19,000	10
				Background	10/10 (100%)	--	7,500 - 19,000								
			Antimony (mg/kg)	Site	1/24 (4.2%)	5.7 - 36	0.62	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	6.5 - 10	--								
			Arsenic (mg/kg)	Site	29/29 (100%)	--	6.2 - 49	WMW Test (w/out NDs)	2.091	-1.645	0.982	Yes	HW Gamma 95% UPL	18	6
				Background	10/10 (100%)	--	4.1 - 22								
			Arsenic (mg/kg)	Site	29/29 (100%)	--	6.2 - 49	WMW Test (w/out NDs)					Normal 95% UPL(t)	11	11
			No Outliers	Background	9/9 (100%)	--	4.1 - 10								
			Barium (mg/kg)	Site	29/29 (100%)	--	43 - 3,200	WMW Test (w/out NDs)	4.085	-1.645	1	Yes	Normal 95% UPL(t)	210	20
				Background	10/10 (100%)	--	75 - 190								
			Beryllium (mg/kg)	Site	29/29 (100%)	--	0.20 - 1.7	WMW Test (w/out NDs)	1.978	-1.645	0.976	Yes	Normal 95% UPL(t)	0.96	11
				Background	10/10 (100%)	--	0.45 - 0.96								
			Cadmium (mg/kg)	Site	29/29 (100%)	--	3.1 - 170	WMW Test (w/out NDs)	4.664	-1.645	1	Yes	Normal 95% UPL(t)	3.3	28
				Background	10/10 (100%)	--	0.52 - 3.1								
			Calcium (mg/kg)	Site	29/29 (100%)	--	11,000 - 160,000	WMW Test (w/out NDs)	2.026	-1.645	0.979	Yes	Normal 95% UPL(t)	40,000	7
				Background	10/10 (100%)	--	1,900 - 34,000								
			Chromium (mg/kg)	Site	29/29 (100%)	--	4.9 - 72	WMW Test (w/out NDs)	2.139	-1.645	0.984	Yes	Normal 95% UPL(t)	40	7
				Background	10/10 (100%)	--	11 - 35								
			Cobalt (mg/kg)	Site	29/29 (100%)	--	4.2 - 100	WMW Test (w/out NDs)	3.104	-1.645	0.999	Yes	Normal 95% UPL(t)	12	20
				Background	10/10 (100%)	--	7.2 - 11								
			Copper (mg/kg)	Site	29/29 (100%)	--	30 - 8,300	WMW Test (w/out NDs)	4.39	-1.645	1	Yes	Normal 95% UPL(t)	52	25
				Background	10/10 (100%)	--	12 - 46								
			Cyanide (mg/kg)	Site	1/3 (33.3%)	3.5 - 3.6	0.48	N/A	--	--	--	--	Maximum Detect	0.87	0
				Background	1/10 (10.0%)	2.9 - 4.4	0.87								
			Iron (mg/kg)	Site	29/29 (100%)	--	14,000 - 180,000	WMW Test (w/out NDs)	2.026	-1.645	0.979	Yes	Normal 95% UPL(t)	32,000	10
				Background	10/10 (100%)	--	15,000 - 29,000								
			Lead (mg/kg)	Site	29/29 (100%)	--	21 - 2,300	WMW Test (w/out NDs)	4.487	-1.645	1	Yes	Normal 95% UPL(t)	44	24
				Background	10/10 (100%)	--	11 - 38								
			Magnesium (mg/kg)	Site	29/29 (100%)	--	3,900 - 33,000	WMW Test (w/out NDs)	0.466	-1.645	0.68	Yes	Normal 95% UPL(t)	15,000	2
				Background	10/10 (100%)	--	1,900 - 13,000								
			Manganese (mg/kg)	Site	29/29 (100%)	--	240 - 10,000	WMW Test (w/out NDs)	3.056	-1.645	0.999	Yes	Normal 95% UPL(t)	930	17
				Background	10/10 (100%)	--	370 - 850								
			Mercury (mg/kg)	Site	25/29 (86.2%)	0.11 - 0.34	0.077 - 2.0	N/A	--	--	--	--	Nonparametric 95% UPL	0.22	11
				Background	5/10 (50.0%)	0.11 - 0.18	0.069 - 0.22								
			Nickel (mg/kg)	Site	29/29 (100%)	--	8.4 - 65	WMW Test (w/out NDs)	2.3	-1.645	0.989	Yes	Nonparametric 95% UPL	33	15
				Background	10/10 (100%)	--	14 - 33								
			Potassium (mg/kg)	Site	29/29 (100%)	--	260 - 3,500	WMW Test (w/out NDs)	1.383	-1.645	0.917	Yes	Normal 95% UPL(t)	2,800	8
				Background	10/10 (100%)	--	940 - 2,400								
			Selenium (mg/kg)	Site	27/29 (93.1%)	4.6 - 9.2	0.85 - 7.9	N/A	--	--	--	--	--	--	27
				Background	0/10 (0.0%)	3.8 - 5.9	--								
			Silver (mg/kg)	Site	28/29 (96.6%)	1.1	0.46 - 14	N/A	--	--	--	--	Nonparametric 95% UPL	1.7	7
				Background	6/10 (60.0%)	1.1 - 1.7	0.13 - 0.81								
			Sodium (mg/kg)	Site	22/29 (75.9%)	530 - 14,000	210 - 3,700	N/A	--	--	--	--	Nonparametric 95% UPL	710	14
				Background	6/10 (60.0%)	540 - 710	200 - 230								
			Thallium (mg/kg)	Site	6/29 (20.7%)	2.4 - 8.4	0.67 - 1.3	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	1.2	4
				Background	9/10 (90.0%)	2.7	0.61 - 1.1								
			Vanadium (mg/kg)	Site	29/29 (100%)	--	9.2 - 65	WMW Test (w/out NDs)	1.865	-1.645	0.969	Yes	Normal 95% UPL(t)	40	7
				Background	10/10 (100%)	--	21 - 42								
			Zinc (mg/kg)	Site	29/29 (100%)	--	450 - 65,000	WMW Test (w/out NDs)	4.68	-1.645	1	Yes	Normal 95% UPL(t)	220	29
				Background	10/10 (100%)	--	42 - 200								
		Miscellaneous-SPLP	Fluoride (mg/L)	Site	3/3 (100%)	--	0.49 - 2.2	N/A	--	--	--	--	Normal 95% UPL(t)	0.71	2
				Background	10/10 (100%)	--	0.40 - 0.71								
		PCBs	Aroclor 1016 (mg/kg)	Site	0/3 (0.0%)	0.033 - 0.047	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.038 - 0.058	--								
			Aroclor 1221 (mg/kg)	Site	0/3 (0.0%)	0.067 - 0.096	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.078 - 0.12	--								
			Aroclor 1232 (mg/kg)	Site	0/3 (0.0%)	0.033 - 0.047	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.038 - 0.058	--								
			Aroclor 1242 (mg/kg)	Site	0/3 (0.0%)	0.033 - 0.047	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.038 - 0.058	--								
			Aroclor 1248 (mg/kg)	Site	0/3 (0.0%)	0.033 - 0.047	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.038 - 0.058	--								
			Aroclor 1254 (mg/kg)	Site	1/3 (33.3%)	0.046 - 0.047	0.26	N/A	--	--	--	--	Maximum Detect	0.044	1
				Background	3/10 (30.0%)	0.038 - 0.058	0.018 - 0.044								

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								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Trespasser (1C)	Surface Soil	PCBs	Aroclor 1260 (mg/kg)	Site	1/3 (33.3%)	0.046 - 0.047	0.050	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	0.038 - 0.058	--								
			Total PCBs (mg/kg)	Site	1/3 (33.3%)	0.094 - 0.096	0.31	N/A	--	--	--	--	Maximum Detect	0.044	1
				Background	3/10 (30.0%)	0.078 - 0.12	0.018 - 0.044								
		Pesticides/Herbicides	4,4'-DDD (ug/kg)	Site	1/3 (33.3%)	3.3 - 4.7	1.1	N/A	--	--	--	--	Maximum Detect	1.5	0
				Background	1/10 (10.0%)	3.8 - 5.8	1.5								
			4,4'-DDE (ug/kg)	Site	2/2 (100%)	--	1.7 - 2.3	N/A	--	--	--	--	Maximum Detect	2.3	0
				Background	4/10 (40.0%)	3.8 - 5.8	1.1 - 2.3								
			4,4'-DDT (ug/kg)	Site	2/3 (66.7%)	4.7	1.9 - 17	N/A	--	--	--	--	--	--	2
				Background	0/10 (0.0%)	3.8 - 5.8	--								
			Aldrin (ug/kg)	Site	0/3 (0.0%)	1.7 - 2.4	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 3.0	--								
			Alpha-BHC (ug/kg)	Site	0/3 (0.0%)	1.7 - 2.4	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 3.0	--								
			Alpha-Chlordane (ug/kg)	Site	2/3 (66.7%)	2.4	0.85 - 2.0	N/A	--	--	--	--	Maximum Detect	3.9	0
				Background	3/10 (30.0%)	2.0 - 2.9	0.68 - 3.9								
			Beta-BHC (ug/kg)	Site	0/3 (0.0%)	1.7 - 2.4	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 3.0	--								
			delta-BHC (ug/kg)	Site	0/3 (0.0%)	1.7 - 2.4	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 3.0	--								
			Dieldrin (ug/kg)	Site	3/3 (100%)	--	4.1 - 13	N/A	--	--	--	--	Nonparametric 95% UPL	5.8	1
				Background	7/10 (70.0%)	3.8 - 5.8	1.3 - 4.6								
			Endosulfan I (ug/kg)	Site	0/3 (0.0%)	1.7 - 2.4	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 3.0	--								
			Endosulfan II (ug/kg)	Site	0/3 (0.0%)	3.3 - 4.7	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	3.8 - 5.8	--								
			Endosulfan sulfate (ug/kg)	Site	0/3 (0.0%)	3.3 - 4.7	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	3.8 - 5.8	--								
			Endrin (ug/kg)	Site	1/3 (33.3%)	4.6 - 4.7	3.2	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	3.8 - 5.8	--								
			Endrin aldehyde (ug/kg)	Site	1/3 (33.3%)	3.3 - 4.7	1.2	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	3.8 - 5.8	--								
			Endrin ketone (ug/kg)	Site	0/3 (0.0%)	3.3 - 4.7	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	3.8 - 5.8	--								
			gamma-BHC (Lindane) (ug/kg)	Site	0/3 (0.0%)	1.7 - 2.4	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 3.0	--								
			gamma-Chlordane (ug/kg)	Site	2/3 (66.7%)	1.7	1.2 - 1.3	N/A	--	--	--	--	Nonparametric 95% UPL	2.9	0
				Background	5/10 (50.0%)	2.0 - 2.9	0.75 - 1.5								
			Heptachlor (ug/kg)	Site	0/3 (0.0%)	1.7 - 2.4	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 3.0	--								
			Heptachlor epoxide (ug/kg)	Site	1/3 (33.3%)	1.7 - 2.4	0.86	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	2.0 - 3.0	--								
			Methoxychlor (ug/kg)	Site	0/3 (0.0%)	17 - 24	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	20 - 30	--								
			Toxaphene (ug/kg)	Site	0/3 (0.0%)	170 - 240	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	200 - 300	--								
		SVOCs	Acenaphthene (mg/kg)	Site	0/3 (0.0%)	0.46 - 0.47	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.38 - 0.58	--								
			Acenaphthylene (mg/kg)	Site	0/3 (0.0%)	0.46 - 0.47	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.38 - 0.58	--								
			Anthracene (mg/kg)	Site	0/3 (0.0%)	0.46 - 0.47	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.38 - 0.58	--								
			Benzo(a)anthracene (mg/kg)	Site	0/3 (0.0%)	0.46 - 0.47	--	N/A	--	--	--	--	Maximum Detect	0.17	0
				Background	1/10 (10.0%)	0.38 - 0.58	0.17								
			Benzo(a)pyrene (mg/kg)	Site	0/3 (0.0%)	0.46 - 0.47	--	N/A	--	--	--	--	Maximum Detect	0.17	0
				Background	1/10 (10.0%)	0.38 - 0.58	0.17								
			Benzo(b)fluoranthene (mg/kg)	Site	0/3 (0.0%)	0.46 - 0.47	--	N/A	--	--	--	--	Maximum Detect	0.25	0
				Background	1/10 (10.0%)	0.38 - 0.58	0.25								
			Benzo(g,h,i)perylene (mg/kg)	Site	0/3 (0.0%)	0.46 - 0.47	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.38 - 0.58	--								
			Benzo(k)fluoranthene (mg/kg)	Site	0/3 (0.0%)	0.46 - 0.47	--	N/A	--	--	--	--	Maximum Detect	0.20	0
				Background	1/10 (10.0%)	0.38 - 0.58	0.20								
			Chrysene (mg/kg)	Site	0/3 (0.0%)	0.46 - 0.47	--	N/A	--	--	--	--	Maximum Detect	0.25	0
				Background	1/10 (10.0%)	0.38 - 0.58	0.25								

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								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Trespasser (1C)	Surface Soil	SVOCs	Dibenz(a,h)anthracene (mg/kg)	Site	0/3 (0.0%)	0.46 - 0.47	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.38 - 0.58	--								
			Fluoranthene (mg/kg)	Site	0/3 (0.0%)	0.46 - 0.47	--	N/A	--	--	--	--	Maximum Detect	0.20	0
				Background	1/10 (10.0%)	0.38 - 0.58	0.20								
			Fluorene (mg/kg)	Site	0/3 (0.0%)	0.46 - 0.47	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.38 - 0.58	--								
			Indeno(1,2,3-cd)pyrene (mg/kg)	Site	0/3 (0.0%)	0.46 - 0.47	--	N/A	--	--	--	--	Maximum Detect	0.15	0
				Background	1/10 (10.0%)	0.38 - 0.58	0.15								
			Naphthalene (mg/kg)	Site	0/3 (0.0%)	0.46 - 0.47	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.38 - 0.58	--								
			Phenanthrene (mg/kg)	Site	0/3 (0.0%)	0.46 - 0.47	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.38 - 0.58	--								
			Pyrene (mg/kg)	Site	0/3 (0.0%)	0.46 - 0.47	--	N/A	--	--	--	--	Maximum Detect	0.25	0
				Background	1/10 (10.0%)	0.38 - 0.58	0.25								
			Total PAHs (mg/kg)	Site	0/3 (0.0%)	0.46 - 0.47	--	N/A	--	--	--	--	Maximum Detect	1.6	0
				Background	1/10 (10.0%)	0.38 - 0.58	1.6								
	Depth-weighted Soil (0-2 ft)	Metals	Aluminum (mg/kg)	Site	28/28 (100%)	--	2,700 - 22,000	WMW Test (w/out NDs)	0.978	-1.645	0.836	Yes	Normal 95% UPL(t)	19,000	9
				Background	10/10 (100%)	--	8,800 - 17,000								
			Antimony (mg/kg)	Site	2/23 (8.7%)	6.1 - 37	2.3 - 12	N/A	--	--	--	--	--	--	2
				Background	0/10 (0.0%)	6.8 - 10	--								
			Arsenic (mg/kg)	Site	28/28 (100%)	--	5.6 - 41	WMW Test (w/out NDs)	2.884	-1.645	0.998	Yes	Normal 95% UPL(t)	14	11
				Background	10/10 (100%)	--	4.2 - 14								
			Arsenic (mg/kg)	Site	28/28 (100%)	--	5.6 - 41	WMW Test (w/out NDs)					Normal 95% UPL(t)	13	14
			No Outliers	Background	9/9 (100%)	--	4.2 - 14								
			Barium (mg/kg)	Site	28/28 (100%)	--	130 - 3,700	WMW Test (w/out NDs)	4.459	-1.645	1	Yes	Normal 95% UPL(t)	220	26
				Background	10/10 (100%)	--	81 - 200								
			Beryllium (mg/kg)	Site	28/28 (100%)	--	0.25 - 1.8	WMW Test (w/out NDs)	1.641	-1.645	0.95	Yes	Normal 95% UPL(t)	0.92	14
				Background	10/10 (100%)	--	0.49 - 0.87								
			Cadmium (mg/kg)	Site	28/28 (100%)	--	4.6 - 650	WMW Test (w/out NDs)	4.624	-1.645	1	Yes	HW Gamma 95% UPL	6.0	27
				Background	10/10 (100%)	--	0.56 - 5.4								
			Calcium (mg/kg)	Site	28/28 (100%)	--	8,800 - 160,000	WMW Test (w/out NDs)	1.89	-1.645	0.971	Yes	Normal 95% UPL(t)	36,000	10
				Background	10/10 (100%)	--	1,900 - 32,000								
			Chromium (mg/kg)	Site	28/28 (100%)	--	4.7 - 58	WMW Test (w/out NDs)	0.414	-1.645	0.661	Yes	Normal 95% UPL(t)	58	1
				Background	10/10 (100%)	--	13 - 60								
			Cobalt (mg/kg)	Site	28/28 (100%)	--	4.2 - 100	WMW Test (w/out NDs)	2.519	-1.645	0.994	Yes	HW Gamma 95% UPL	12	16
				Background	10/10 (100%)	--	8.1 - 13								
			Copper (mg/kg)	Site	28/28 (100%)	--	18 - 5,000	WMW Test (w/out NDs)	3.928	-1.645	1	Yes	Normal 95% UPL(t)	63	21
				Background	10/10 (100%)	--	13 - 60								
			Cyanide (mg/kg)	Site	2/3 (66.7%)	3.8	0.53 - 1.1	N/A	--	--	--	--	Maximum Detect	3.1	0
				Background	1/10 (10.0%)	2.9 - 4.2	3.1								
			Iron (mg/kg)	Site	28/28 (100%)	--	12,000 - 87,000	WMW Test (w/out NDs)	2.354	-1.645	0.991	Yes	Normal 95% UPL(t)	32,000	12
				Background	10/10 (100%)	--	15,000 - 29,000								
			Lead (mg/kg)	Site	28/28 (100%)	--	47 - 2,200	WMW Test (w/out NDs)	4.558	-1.645	1	Yes	Normal 95% UPL(t)	61	26
				Background	10/10 (100%)	--	10 - 62								
			Magnesium (mg/kg)	Site	28/28 (100%)	--	2,600 - 19,000	WMW Test (w/out NDs)	-0.149	-1.645	0.441	Yes	Normal 95% UPL(t)	14,000	1
				Background	10/10 (100%)	--	2,300 - 12,000								
			Manganese (mg/kg)	Site	28/28 (100%)	--	170 - 5,800	WMW Test (w/out NDs)	1.873	-1.645	0.969	Yes	Normal 95% UPL(t)	970	12
				Background	10/10 (100%)	--	450 - 930								
			Mercury (mg/kg)	Site	25/28 (89.3%)	0.12 - 0.41	0.070 - 7.6	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	0.34	17
				Background	6/10 (60.0%)	0.12 - 0.17	0.095 - 0.33								
			Nickel (mg/kg)	Site	28/28 (100%)	--	11 - 51	WMW Test (w/out NDs)	1.243	-1.645	0.893	Yes	Normal 95% UPL(t)	39	6
				Background	10/10 (100%)	--	16 - 39								
			Potassium (mg/kg)	Site	28/28 (100%)	--	220 - 3,200	WMW Test (w/out NDs)	0.878	-1.645	0.81	Yes	Normal 95% UPL(t)	2,600	7
				Background	10/10 (100%)	--	1,100 - 2,400								
			Selenium (mg/kg)	Site	28/28 (100%)	--	1.0 - 4.3	N/A	--	--	--	--	--	--	28
				Background	0/10 (0.0%)	4.0 - 5.7	--								
			Silver (mg/kg)	Site	28/28 (100%)	--	0.76 - 6.0	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	1.6	9
				Background	7/10 (70.0%)	1.1 - 1.4	0.13 - 1.4								
			Sodium (mg/kg)	Site	23/28 (82.1%)	1,600 - 20,000	510 - 2,700	Gehan Test	3.98	-1.645	1	Yes	95% Kaplan-Meier UPL(t)	710	17
				Background	8/10 (80.0%)	560 - 600	200 - 650								
			Thallium (mg/kg)	Site	7/28 (25.0%)	2.6 - 10	0.88 - 4.0	N/A	--	--	--	--	Nonparametric 95% UPL	3.0	2
				Background	9/10 (90.0%)	2.9	0.62 - 3.0								
			Vanadium (mg/kg)	Site	28/28 (100%)	--	10 - 42	WMW Test (w/out NDs)	0.779	-1.645	0.782	Yes	Normal 95% UPL(t)	39	5
				Background	10/10 (100%)	--	22 - 40								
			Zinc (mg/kg)	Site	28/28 (100%)	--	530 - 76,000	WMW Test (w/out NDs)	4.658	-1.645	1	Yes	Normal 95% UPL(t)	280	28
				Background	10/10 (100%)	--	46 - 290								

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								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Trespasser (1C)	Depth-weighted Soil (0-2 ft)	Miscellaneous-SPLP	Fluoride (mg/L)	Site	3/3 (100%)	--	0.63 - 6.1	N/A	--	--	--	--	Normal 95% UPL(t)	0.87	2
				Background	10/10 (100%)	--	0.24 - 0.85								
		PCBs	Aroclor 1016 (mg/kg)	Site	0/3 (0.0%)	0.033 - 0.051	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.039 - 0.055	--								
			Aroclor 1221 (mg/kg)	Site	0/3 (0.0%)	0.067 - 0.099	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.079 - 0.11	--								
			Aroclor 1232 (mg/kg)	Site	0/3 (0.0%)	0.033 - 0.051	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.039 - 0.055	--								
			Aroclor 1242 (mg/kg)	Site	0/3 (0.0%)	0.033 - 0.051	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.039 - 0.055	--								
			Aroclor 1248 (mg/kg)	Site	0/3 (0.0%)	0.033 - 0.051	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.039 - 0.055	--								
			Aroclor 1254 (mg/kg)	Site	1/3 (33.3%)	0.048 - 0.051	0.083	N/A	--	--	--	--	Maximum Detect	0.064	1
				Background	3/10 (30.0%)	0.039 - 0.055	0.029 - 0.064								
			Aroclor 1260 (mg/kg)	Site	1/3 (33.3%)	0.048 - 0.051	0.037	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	0.039 - 0.055	--								
			Total PCBs (mg/kg)	Site	1/3 (33.3%)	0.099 - 0.099	0.096	N/A	--	--	--	--	Maximum Detect	0.064	1
				Background	3/10 (30.0%)	0.079 - 0.11	0.029 - 0.064								
		Pesticides/Herbicides	4,4'-DDD (ug/kg)	Site	1/3 (33.3%)	3.3 - 5.1	3.5	N/A	--	--	--	--	Maximum Detect	4.1	0
				Background	3/10 (30.0%)	3.9 - 5.5	2.1 - 4.1								
			4,4'-DDE (ug/kg)	Site	2/3 (66.7%)	3.3	1.6 - 4.2	N/A	--	--	--	--	Maximum Detect	4.3	0
				Background	4/10 (40.0%)	3.9 - 5.5	1.1 - 4.3								
			4,4'-DDT (ug/kg)	Site	2/3 (66.7%)	5.1	4.5 - 6.7	N/A	--	--	--	--	--	--	2
				Background	0/10 (0.0%)	3.9 - 5.5	--								
			Aldrin (ug/kg)	Site	0/3 (0.0%)	1.7 - 2.6	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 2.9	--								
			Alpha-BHC (ug/kg)	Site	0/3 (0.0%)	1.7 - 2.6	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 2.9	--								
			Alpha-Chlordane (ug/kg)	Site	2/3 (66.7%)	2.6	1.8 - 2.3	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	2.7	0
				Background	5/10 (50.0%)	2.0 - 2.7	0.73 - 3.1								
			Beta-BHC (ug/kg)	Site	0/3 (0.0%)	1.7 - 2.6	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 2.9	--								
			delta-BHC (ug/kg)	Site	0/3 (0.0%)	1.7 - 2.6	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 2.9	--								
			Dieldrin (ug/kg)	Site	3/3 (100%)	--	3.4 - 9.3	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	5.3	2
				Background	7/10 (70.0%)	3.9 - 5.5	2.7 - 5.1								
			Endosulfan I (ug/kg)	Site	0/3 (0.0%)	1.7 - 2.6	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 2.9	--								
			Endosulfan II (ug/kg)	Site	0/3 (0.0%)	3.3 - 5.1	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	3.9 - 5.5	--								
			Endosulfan sulfate (ug/kg)	Site	0/3 (0.0%)	3.3 - 5.1	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	3.9 - 5.5	--								
			Endrin (ug/kg)	Site	1/3 (33.3%)	4.8 - 5.1	3.3	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	3.9 - 5.5	--								
			Endrin aldehyde (ug/kg)	Site	1/3 (33.3%)	3.3 - 5.1	4.0	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	3.9 - 5.5	--								
			Endrin ketone (ug/kg)	Site	0/3 (0.0%)	3.3 - 5.1	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	3.9 - 5.5	--								
			gamma-BHC (Lindane) (ug/kg)	Site	0/3 (0.0%)	1.7 - 2.6	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 2.9	--								
			gamma-Chlordane (ug/kg)	Site	2/3 (66.7%)	1.7	2.4 - 4.7	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	2.8	1
				Background	5/10 (50.0%)	2.0 - 2.7	0.74 - 2.9								
			Heptachlor (ug/kg)	Site	0/3 (0.0%)	1.7 - 2.6	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 2.9	--								
			Heptachlor epoxide (ug/kg)	Site	1/3 (33.3%)	1.7 - 2.6	2.1	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	2.0 - 2.9	--								
			Methoxychlor (ug/kg)	Site	0/3 (0.0%)	17 - 26	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	20 - 29	--								
			Toxaphene (ug/kg)	Site	0/3 (0.0%)	170 - 260	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	200 - 290	--								

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								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Trespasser (1C)	Depth-weighted Soil (0-2 ft)	SVOCs	Acenaphthene (mg/kg)	Site	0/3 (0.0%)	0.47 - 0.51	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.39 - 0.55	--								
			Acenaphthylene (mg/kg)	Site	0/3 (0.0%)	0.47 - 0.51	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.39 - 0.55	--								
			Anthracene (mg/kg)	Site	0/3 (0.0%)	0.47 - 0.51	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.39 - 0.55	--								
			Benzo(a)anthracene (mg/kg)	Site	0/3 (0.0%)	0.47 - 0.51	--	N/A	--	--	--	--	Maximum Detect	0.41	0
				Background	3/10 (30.0%)	0.39 - 0.55	0.21 - 0.41								
			Benzo(a)pyrene (mg/kg)	Site	0/3 (0.0%)	0.47 - 0.51	--	N/A	--	--	--	--	Maximum Detect	0.41	0
				Background	3/10 (30.0%)	0.39 - 0.55	0.20 - 0.41								
			Benzo(b)fluoranthene (mg/kg)	Site	0/3 (0.0%)	0.47 - 0.51	--	N/A	--	--	--	--	Maximum Detect	0.25	0
				Background	3/10 (30.0%)	0.39 - 0.55	0.15 - 0.25								
			Benzo(g,h,i)perylene (mg/kg)	Site	0/3 (0.0%)	0.47 - 0.51	--	N/A	--	--	--	--	Maximum Detect	0.23	0
				Background	1/10 (10.0%)	0.39 - 0.55	0.23								
			Benzo(k)fluoranthene (mg/kg)	Site	0/3 (0.0%)	0.47 - 0.51	--	N/A	--	--	--	--	Maximum Detect	0.23	0
				Background	3/10 (30.0%)	0.39 - 0.55	0.13 - 0.23								
			Chrysene (mg/kg)	Site	0/3 (0.0%)	0.47 - 0.51	--	N/A	--	--	--	--	Maximum Detect	0.26	0
				Background	3/10 (30.0%)	0.39 - 0.55	0.16 - 0.26								
			Dibenz(a,h)anthracene (mg/kg)	Site	0/3 (0.0%)	0.47 - 0.51	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.39 - 0.55	--								
			Fluoranthene (mg/kg)	Site	1/3 (33.3%)	0.47 - 0.51	0.20	N/A	--	--	--	--	Maximum Detect	0.23	0
				Background	3/10 (30.0%)	0.39 - 0.55	0.13 - 0.23								
			Fluorene (mg/kg)	Site	0/3 (0.0%)	0.47 - 0.51	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.39 - 0.55	--								
			Indeno(1,2,3-cd)pyrene (mg/kg)	Site	0/3 (0.0%)	0.47 - 0.51	--	N/A	--	--	--	--	Maximum Detect	0.41	0
				Background	3/10 (30.0%)	0.39 - 0.55	0.20 - 0.41								
			Naphthalene (mg/kg)	Site	0/3 (0.0%)	0.47 - 0.51	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.39 - 0.55	--								
			Phenanthrene (mg/kg)	Site	0/3 (0.0%)	0.47 - 0.51	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.39 - 0.55	--								
			Pyrene (mg/kg)	Site	1/3 (33.3%)	0.47 - 0.51	0.21	N/A	--	--	--	--	Maximum Detect	0.27	0
				Background	3/10 (30.0%)	0.39 - 0.55	0.17 - 0.27								
			Total PAHs (mg/kg)	Site	1/3 (33.3%)	0.47 - 0.51	0.29	N/A	--	--	--	--	Maximum Detect	1.2	0
				Background	3/10 (30.0%)	0.39 - 0.55	0.87 - 1.2								
Trespasser (2)	Surface Soil	Metals	Aluminum (mg/kg)	Site	24/24 (100%)	--	5,000 - 20,000	WMW Test (w/out NDs)	1.947	-1.645	0.974	Yes	Normal 95% UPL(t)	19,000	4
				Background	10/10 (100%)	--	7,500 - 19,000								
			Antimony (mg/kg)	Site	0/24 (0.0%)	6.9 - 14	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	6.5 - 10	--								
			Arsenic (mg/kg)	Site	24/24 (100%)	--	4.2 - 28	WMW Test (w/out NDs)	0.491	-1.645	0.688	Yes	HW Gamma 95% UPL	18	1
				Background	10/10 (100%)	--	4.1 - 22								
			Arsenic (mg/kg)	Site	24/24 (100%)	--	4.2 - 28	WMW Test (w/out NDs)					Normal 95% UPL(t)	11	2
			No Outliers	Background	9/9 (100%)	--	4.1 - 10								
			Barium (mg/kg)	Site	24/24 (100%)	--	140 - 1,200	WMW Test (w/out NDs)	3.137	-1.645	0.999	Yes	Normal 95% UPL(t)	210	9
				Background	10/10 (100%)	--	75 - 190								
			Beryllium (mg/kg)	Site	24/24 (100%)	--	0.29 - 1.0	WMW Test (w/out NDs)	2.306	-1.645	0.989	Yes	Normal 95% UPL(t)	0.96	5
				Background	10/10 (100%)	--	0.45 - 0.96								
			Cadmium (mg/kg)	Site	24/24 (100%)	--	1.5 - 26	WMW Test (w/out NDs)	3.269	-1.645	0.999	Yes	Normal 95% UPL(t)	3.3	12
				Background	10/10 (100%)	--	0.52 - 3.1								
			Calcium (mg/kg)	Site	24/24 (100%)	--	12,000 - 45,000	WMW Test (w/out NDs)	1.417	-1.645	0.922	Yes	Normal 95% UPL(t)	40,000	1
				Background	10/10 (100%)	--	1,900 - 34,000								
			Chromium (mg/kg)	Site	24/24 (100%)	--	10 - 60	WMW Test (w/out NDs)	3.496	-1.645	1	Yes	Normal 95% UPL(t)	40	16
				Background	10/10 (100%)	--	11 - 35								
			Cobalt (mg/kg)	Site	24/24 (100%)	--	5.1 - 12	WMW Test (w/out NDs)	1.021	-1.645	0.846	Yes	Normal 95% UPL(t)	12	2
				Background	10/10 (100%)	--	7.2 - 11								
			Copper (mg/kg)	Site	24/24 (100%)	--	17 - 99	WMW Test (w/out NDs)	3.799	-1.645	1	Yes	Normal 95% UPL(t)	52	9
				Background	10/10 (100%)	--	12 - 46								
			Cyanide (mg/kg)	Site	0/3 (0.0%)	3.0 - 4.2	--	N/A	--	--	--	--	Maximum Detect	0.87	0
				Background	1/10 (10.0%)	2.9 - 4.4	0.87								
			Iron (mg/kg)	Site	24/24 (100%)	--	9,900 - 36,000	WMW Test (w/out NDs)	1.191	-1.645	0.883	Yes	Normal 95% UPL(t)	32,000	1
				Background	10/10 (100%)	--	15,000 - 29,000								
			Lead (mg/kg)	Site	24/24 (100%)	--	36 - 190	WMW Test (w/out NDs)	4.403	-1.645	1	Yes	Normal 95% UPL(t)	44	15
				Background	10/10 (100%)	--	11 - 38								
			Magnesium (mg/kg)	Site	24/24 (100%)	--	5,800 - 15,000	WMW Test (w/out NDs)	1.569	-1.645	0.942	Yes	Normal 95% UPL(t)	15,000	0
				Background	10/10 (100%)	--	1,900 - 13,000								

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								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Trespasser (2)	Surface Soil	Metals	Manganese (mg/kg)	Site	24/24 (100%)	--	410 - 1,000	WMW Test (w/out NDs)	0.661	-1.645	0.746	Yes	Normal 95% UPL(t)	930	1
				Background	10/10 (100%)	--	370 - 850								
			Mercury (mg/kg)	Site	22/24 (91.7%)	0.11 - 0.15	0.058 - 0.48	N/A	--	--	--	--	Nonparametric 95% UPL	0.22	4
				Background	5/10 (50.0%)	0.11 - 0.18	0.069 - 0.22								
			Nickel (mg/kg)	Site	24/24 (100%)	--	11 - 43	WMW Test (w/out NDs)	2.967	-1.645	0.998	Yes	Nonparametric 95% UPL	33	7
				Background	10/10 (100%)	--	14 - 33								
			Potassium (mg/kg)	Site	24/24 (100%)	--	740 - 2,800	WMW Test (w/out NDs)	1.758	-1.645	0.961	Yes	Normal 95% UPL(t)	2,800	0
				Background	10/10 (100%)	--	940 - 2,400								
			Selenium (mg/kg)	Site	24/24 (100%)	--	0.71 - 3.0	N/A	--	--	--	--	--	--	24
				Background	0/10 (0.0%)	3.8 - 5.9	--								
			Silver (mg/kg)	Site	24/24 (100%)	--	0.18 - 1.6	N/A	--	--	--	--	Nonparametric 95% UPL	1.7	0
				Background	6/10 (60.0%)	1.1 - 1.7	0.13 - 0.81								
			Sodium (mg/kg)	Site	9/24 (37.5%)	580 - 800	210 - 700	N/A	--	--	--	--	Nonparametric 95% UPL	710	0
				Background	6/10 (60.0%)	540 - 710	200 - 230								
			Thallium (mg/kg)	Site	0/24 (0.0%)	2.9 - 5.7	--	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	1.2	0
				Background	9/10 (90.0%)	2.7	0.61 - 1.1								
			Vanadium (mg/kg)	Site	24/24 (100%)	--	15 - 38	WMW Test (w/out NDs)	1.814	-1.645	0.965	Yes	Normal 95% UPL(t)	40	0
				Background	10/10 (100%)	--	21 - 42								
			Zinc (mg/kg)	Site	24/24 (100%)	--	190 - 2,500	WMW Test (w/out NDs)	4.441	-1.645	1	Yes	Normal 95% UPL(t)	220	20
				Background	10/10 (100%)	--	42 - 200								
		Miscellaneous-SPLP	Fluoride (mg/L)	Site	3/3 (100%)	--	0.23 - 0.38	N/A	--	--	--	--	Normal 95% UPL(t)	0.71	0
				Background	10/10 (100%)	--	0.40 - 0.71								
		PCBs	Aroclor 1016 (mg/kg)	Site	0/3 (0.0%)	0.039 - 0.055	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.038 - 0.058	--								
			Aroclor 1221 (mg/kg)	Site	0/3 (0.0%)	0.080 - 0.11	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.078 - 0.12	--								
			Aroclor 1232 (mg/kg)	Site	0/3 (0.0%)	0.039 - 0.055	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.038 - 0.058	--								
			Aroclor 1242 (mg/kg)	Site	0/3 (0.0%)	0.039 - 0.055	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.038 - 0.058	--								
			Aroclor 1248 (mg/kg)	Site	0/3 (0.0%)	0.039 - 0.055	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.038 - 0.058	--								
			Aroclor 1254 (mg/kg)	Site	0/3 (0.0%)	0.039 - 0.055	--	N/A	--	--	--	--	Maximum Detect	0.044	0
				Background	3/10 (30.0%)	0.038 - 0.058	0.018 - 0.044								
			Aroclor 1260 (mg/kg)	Site	0/3 (0.0%)	0.039 - 0.055	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.038 - 0.058	--								
			Total PCBs (mg/kg)	Site	0/3 (0.0%)	0.080 - 0.11	--	N/A	--	--	--	--	Maximum Detect	0.044	0
				Background	3/10 (30.0%)	0.078 - 0.12	0.018 - 0.044								
		Pesticides/Herbicides	4,4'-DDD (ug/kg)	Site	1/3 (33.3%)	3.9 - 5.3	1.3	N/A	--	--	--	--	Maximum Detect	1.5	0
				Background	1/10 (10.0%)	3.8 - 5.8	1.5								
			4,4'-DDE (ug/kg)	Site	3/3 (100%)	--	1.1 - 2.1	N/A	--	--	--	--	Maximum Detect	2.3	0
				Background	4/10 (40.0%)	3.8 - 5.8	1.1 - 2.3								
			4,4'-DDT (ug/kg)	Site	1/3 (33.3%)	3.9 - 5.3	2.5	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	3.8 - 5.8	--								
			Aldrin (ug/kg)	Site	0/3 (0.0%)	2.0 - 2.8	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 3.0	--								
			Alpha-BHC (ug/kg)	Site	0/3 (0.0%)	2.0 - 2.8	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 3.0	--								
			Alpha-Chlordane (ug/kg)	Site	1/3 (33.3%)	2.0 - 2.7	1.1	N/A	--	--	--	--	Maximum Detect	3.9	0
				Background	3/10 (30.0%)	2.0 - 2.9	0.68 - 3.9								
			Beta-BHC (ug/kg)	Site	0/3 (0.0%)	2.0 - 2.8	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 3.0	--								
			delta-BHC (ug/kg)	Site	0/3 (0.0%)	2.0 - 2.8	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 3.0	--								
			Dieldrin (ug/kg)	Site	2/3 (66.7%)	5.5	0.84 - 1.3	N/A	--	--	--	--	Nonparametric 95% UPL	5.8	0
				Background	7/10 (70.0%)	3.8 - 5.8	1.3 - 4.6								
			Endosulfan I (ug/kg)	Site	0/3 (0.0%)	2.0 - 2.8	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 3.0	--								
			Endosulfan II (ug/kg)	Site	0/3 (0.0%)	3.9 - 5.5	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	3.8 - 5.8	--								
			Endosulfan sulfate (ug/kg)	Site	0/3 (0.0%)	3.9 - 5.5	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	3.8 - 5.8	--								
			Endrin (ug/kg)	Site	0/3 (0.0%)	3.9 - 5.5	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	3.8 - 5.8	--								

Table A-1
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DePue Lake, DePue, Illinois

								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Trespasser (2)	Surface Soil	Pesticides/Herbicides	Endrin aldehyde (ug/kg)	Site	1/3 (33.3%)	3.9 - 5.5	1.4	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	3.8 - 5.8	--								
			Endrin ketone (ug/kg)	Site	0/3 (0.0%)	3.9 - 5.5	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	3.8 - 5.8	--								
			gamma-BHC (Lindane) (ug/kg)	Site	0/3 (0.0%)	2.0 - 2.8	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 3.0	--								
			gamma-Chlordane (ug/kg)	Site	0/3 (0.0%)	2.0 - 2.8	--	N/A	--	--	--	--	Nonparametric 95% UPL	2.9	0
				Background	5/10 (50.0%)	2.0 - 2.9	0.75 - 1.5								
			Heptachlor (ug/kg)	Site	0/3 (0.0%)	2.0 - 2.8	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 3.0	--								
			Heptachlor epoxide (ug/kg)	Site	0/3 (0.0%)	2.0 - 2.8	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 3.0	--								
			Methoxychlor (ug/kg)	Site	0/3 (0.0%)	20 - 28	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	20 - 30	--								
			Toxaphene (ug/kg)	Site	0/3 (0.0%)	200 - 280	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	200 - 300	--								
		SVOCs	Acenaphthene (mg/kg)	Site	0/3 (0.0%)	0.39 - 0.55	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.38 - 0.58	--								
			Acenaphthylene (mg/kg)	Site	0/3 (0.0%)	0.39 - 0.55	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.38 - 0.58	--								
			Anthracene (mg/kg)	Site	0/3 (0.0%)	0.39 - 0.55	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.38 - 0.58	--								
			Benzo(a)anthracene (mg/kg)	Site	1/3 (33.3%)	0.39 - 0.55	0.12	N/A	--	--	--	--	Maximum Detect	0.17	0
				Background	1/10 (10.0%)	0.38 - 0.58	0.17								
			Benzo(a)pyrene (mg/kg)	Site	1/3 (33.3%)	0.39 - 0.55	0.17	N/A	--	--	--	--	Maximum Detect	0.17	0
				Background	1/10 (10.0%)	0.38 - 0.58	0.17								
			Benzo(b)fluoranthene (mg/kg)	Site	1/3 (33.3%)	0.39 - 0.55	0.17	N/A	--	--	--	--	Maximum Detect	0.25	0
				Background	1/10 (10.0%)	0.38 - 0.58	0.25								
			Benzo(g,h,i)perylene (mg/kg)	Site	1/3 (33.3%)	0.39 - 0.55	0.12	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	0.38 - 0.58	--								
			Benzo(k)fluoranthene (mg/kg)	Site	1/3 (33.3%)	0.39 - 0.55	0.16	N/A	--	--	--	--	Maximum Detect	0.20	0
				Background	1/10 (10.0%)	0.38 - 0.58	0.20								
			Chrysene (mg/kg)	Site	2/3 (66.7%)	0.39	0.11 - 0.17	N/A	--	--	--	--	Maximum Detect	0.25	0
				Background	1/10 (10.0%)	0.38 - 0.58	0.25								
			Dibenz(a,h)anthracene (mg/kg)	Site	0/3 (0.0%)	0.39 - 0.55	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.38 - 0.58	--								
			Fluoranthene (mg/kg)	Site	2/3 (66.7%)	0.39	0.12 - 0.23	N/A	--	--	--	--	Maximum Detect	0.20	1
				Background	1/10 (10.0%)	0.38 - 0.58	0.20								
			Fluorene (mg/kg)	Site	0/3 (0.0%)	0.39 - 0.55	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.38 - 0.58	--								
			Indeno(1,2,3-cd)pyrene (mg/kg)	Site	1/3 (33.3%)	0.39 - 0.55	0.15	N/A	--	--	--	--	Maximum Detect	0.15	0
				Background	1/10 (10.0%)	0.38 - 0.58	0.15								
			Naphthalene (mg/kg)	Site	0/3 (0.0%)	0.39 - 0.55	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.38 - 0.58	--								
			Phenanthrene (mg/kg)	Site	0/3 (0.0%)	0.39 - 0.55	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.38 - 0.58	--								
			Pyrene (mg/kg)	Site	2/3 (66.7%)	0.39	0.13 - 0.20	N/A	--	--	--	--	Maximum Detect	0.25	0
				Background	1/10 (10.0%)	0.38 - 0.58	0.25								
			Total PAHs (mg/kg)	Site	2/3 (66.7%)	0.39	0.36 - 1.5	N/A	--	--	--	--	Maximum Detect	1.6	0
				Background	1/10 (10.0%)	0.38 - 0.58	1.6								
	Depth-weighted Soil (0-2 ft)	Metals	Aluminum (mg/kg)	Site	24/24 (100%)	--	4,900 - 20,000	WMW Test (w/out NDs)	1.455	-1.645	0.927	Yes	Normal 95% UPL(t)	19,000	4
				Background	10/10 (100%)	--	8,800 - 17,000								
			Antimony (mg/kg)	Site	0/24 (0.0%)	7.1 - 10	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	6.8 - 10	--								
			Arsenic (mg/kg)	Site	24/24 (100%)	--	4.9 - 24	WMW Test (w/out NDs)	1.455	-1.645	0.927	Yes	Normal 95% UPL(t)	14	3
				Background	10/10 (100%)	--	4.2 - 14								
			Arsenic (mg/kg)	Site	24/24 (100%)	--	4.9 - 24	WMW Test (w/out NDs)					Normal 95% UPL(t)	13	4
			No Outliers	Background	9/9 (100%)	--	4.2 - 14								
			Barium (mg/kg)	Site	24/24 (100%)	--	150 - 1,500	WMW Test (w/out NDs)	3.534	-1.645	1	Yes	Normal 95% UPL(t)	220	14
				Background	10/10 (100%)	--	81 - 200								
			Beryllium (mg/kg)	Site	24/24 (100%)	--	0.31 - 1.1	WMW Test (w/out NDs)	2.041	-1.645	0.979	Yes	Normal 95% UPL(t)	0.92	5
				Background	10/10 (100%)	--	0.49 - 0.87								
			Cadmium (mg/kg)	Site	24/24 (100%)	--	2.4 - 27	WMW Test (w/out NDs)	3.685	-1.645	1	Yes	HW Gamma 95% UPL	6.0	13
				Background	10/10 (100%)	--	0.56 - 5.4								

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								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Trespasser (2)	Depth-weighted Soil (0-2 ft)	Metals	Calcium (mg/kg)	Site	24/24 (100%)	--	8,600 - 43,000	WMW Test (w/out NDs)	1.002	-1.645	0.842	Yes	Normal 95% UPL(t)	36,000	1
				Background	10/10 (100%)	--	1,900 - 32,000								
			Chromium (mg/kg)	Site	24/24 (100%)	--	9.2 - 69	WMW Test (w/out NDs)	2.476	-1.645	0.993	Yes	Normal 95% UPL(t)	58	9
				Background	10/10 (100%)	--	13 - 60								
			Cobalt (mg/kg)	Site	24/24 (100%)	--	5.3 - 13	WMW Test (w/out NDs)	0.302	-1.645	0.619	Yes	HW Gamma 95% UPL	12	2
				Background	10/10 (100%)	--	8.1 - 13								
			Copper (mg/kg)	Site	24/24 (100%)	--	23 - 78	WMW Test (w/out NDs)	3.194	-1.645	0.999	Yes	Normal 95% UPL(t)	63	8
				Background	10/10 (100%)	--	13 - 60								
			Cyanide (mg/kg)	Site	0/3 (0.0%)	3.1 - 4.0	--	N/A	--	--	--	--	Maximum Detect	3.1	0
				Background	1/10 (10.0%)	2.9 - 4.2	3.1								
			Iron (mg/kg)	Site	24/24 (100%)	--	10,000 - 41,000	WMW Test (w/out NDs)	1.398	-1.645	0.919	Yes	Normal 95% UPL(t)	32,000	1
				Background	10/10 (100%)	--	15,000 - 29,000								
			Lead (mg/kg)	Site	24/24 (100%)	--	32 - 150	WMW Test (w/out NDs)	3.912	-1.645	1	Yes	Normal 95% UPL(t)	61	14
				Background	10/10 (100%)	--	10 - 62								
			Magnesium (mg/kg)	Site	24/24 (100%)	--	4,500 - 14,000	WMW Test (w/out NDs)	1.512	-1.645	0.935	Yes	Normal 95% UPL(t)	14,000	2
				Background	10/10 (100%)	--	2,300 - 12,000								
			Manganese (mg/kg)	Site	24/24 (100%)	--	320 - 1,800	WMW Test (w/out NDs)	-0.548	-1.645	0.292	Yes	Normal 95% UPL(t)	970	3
				Background	10/10 (100%)	--	450 - 930								
			Mercury (mg/kg)	Site	22/24 (91.7%)	0.12 - 0.14	0.072 - 0.62	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	0.34	7
				Background	6/10 (60.0%)	0.12 - 0.17	0.095 - 0.33								
			Nickel (mg/kg)	Site	24/24 (100%)	--	11 - 48	WMW Test (w/out NDs)	1.72	-1.645	0.957	Yes	Normal 95% UPL(t)	39	8
				Background	10/10 (100%)	--	16 - 39								
			Potassium (mg/kg)	Site	24/24 (100%)	--	630 - 2,600	WMW Test (w/out NDs)	1.077	-1.645	0.859	Yes	Normal 95% UPL(t)	2,600	0
				Background	10/10 (100%)	--	1,100 - 2,400								
			Selenium (mg/kg)	Site	24/24 (100%)	--	0.55 - 2.9	N/A	--	--	--	--	--	--	24
				Background	0/10 (0.0%)	4.0 - 5.7	--								
			Silver (mg/kg)	Site	24/24 (100%)	--	0.29 - 1.7	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	1.6	1
				Background	7/10 (70.0%)	1.1 - 1.4	0.13 - 1.4								
			Sodium (mg/kg)	Site	12/24 (50.0%)	590 - 760	230 - 700	Gehan Test	0.484	-1.645	0.686	Yes	95% Kaplan-Meier UPL(t)	710	0
				Background	8/10 (80.0%)	560 - 600	200 - 650								
			Thallium (mg/kg)	Site	0/24 (0.0%)	3.0 - 4.4	--	N/A	--	--	--	--	Nonparametric 95% UPL	3.0	0
				Background	9/10 (90.0%)	2.9	0.62 - 3.0								
			Vanadium (mg/kg)	Site	24/24 (100%)	--	15 - 38	WMW Test (w/out NDs)	1.436	-1.645	0.925	Yes	Normal 95% UPL(t)	39	0
				Background	10/10 (100%)	--	22 - 40								
			Zinc (mg/kg)	Site	24/24 (100%)	--	220 - 1,700	WMW Test (w/out NDs)	4.328	-1.645	1	Yes	Normal 95% UPL(t)	280	19
				Background	10/10 (100%)	--	46 - 290								
		Miscellaneous-SPLP	Fluoride (mg/L)	Site	3/3 (100%)	--	0.36 - 0.53	N/A	--	--	--	--	Normal 95% UPL(t)	0.87	0
				Background	10/10 (100%)	--	0.24 - 0.85								
		PCBs	Aroclor 1016 (mg/kg)	Site	0/3 (0.0%)	0.040 - 0.052	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.039 - 0.055	--								
			Aroclor 1221 (mg/kg)	Site	0/3 (0.0%)	0.082 - 0.10	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.079 - 0.11	--								
			Aroclor 1232 (mg/kg)	Site	0/3 (0.0%)	0.040 - 0.052	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.039 - 0.055	--								
			Aroclor 1242 (mg/kg)	Site	0/3 (0.0%)	0.040 - 0.052	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.039 - 0.055	--								
			Aroclor 1248 (mg/kg)	Site	0/3 (0.0%)	0.040 - 0.052	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.039 - 0.055	--								
			Aroclor 1254 (mg/kg)	Site	0/3 (0.0%)	0.040 - 0.052	--	N/A	--	--	--	--	Maximum Detect	0.064	0
				Background	3/10 (30.0%)	0.039 - 0.055	0.029 - 0.064								
			Aroclor 1260 (mg/kg)	Site	0/3 (0.0%)	0.040 - 0.052	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.039 - 0.055	--								
			Total PCBs (mg/kg)	Site	0/3 (0.0%)	0.082 - 0.10	--	N/A	--	--	--	--	Maximum Detect	0.064	0
				Background	3/10 (30.0%)	0.079 - 0.11	0.029 - 0.064								
		Pesticides/Herbicides	4,4'-DDD (ug/kg)	Site	2/3 (66.7%)	4.0	2.5 - 4.2	N/A	--	--	--	--	Maximum Detect	4.1	1
				Background	3/10 (30.0%)	3.9 - 5.5	2.1 - 4.1								
			4,4'-DDE (ug/kg)	Site	3/3 (100%)	--	1.9 - 4.4	N/A	--	--	--	--	Maximum Detect	4.3	1
				Background	4/10 (40.0%)	3.9 - 5.5	1.1 - 4.3								
			4,4'-DDT (ug/kg)	Site	3/3 (100%)	--	2.0 - 4.5	N/A	--	--	--	--	--	--	3
				Background	0/10 (0.0%)	3.9 - 5.5	--								
			Aldrin (ug/kg)	Site	0/3 (0.0%)	2.1 - 2.7	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 2.9	--								
			Alpha-BHC (ug/kg)	Site	0/3 (0.0%)	2.1 - 2.7	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 2.9	--								

Table A-1
Hypothesis Testing and Background Screening Levels - Soil
OU5 Baseline Human Health Risk Assessment
DePue Lake, DePue, Illinois

								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Trespasser (2)	Depth-weighted Soil (0-2 ft)	Pesticides/Herbicides	Alpha-Chlordane (ug/kg)	Site	3/3 (100%)	--	1.0 - 2.2	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	2.7	0
				Background	5/10 (50.0%)	2.0 - 2.7	0.73 - 3.1								
			Beta-BHC (ug/kg)	Site	0/3 (0.0%)	2.1 - 2.7	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 2.9	--								
			delta-BHC (ug/kg)	Site	0/3 (0.0%)	2.1 - 2.7	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 2.9	--								
			Dieldrin (ug/kg)	Site	2/3 (66.7%)	5.2	1.9 - 2.2	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	5.3	0
				Background	7/10 (70.0%)	3.9 - 5.5	2.7 - 5.1								
			Endosulfan I (ug/kg)	Site	0/3 (0.0%)	2.1 - 2.7	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 2.9	--								
			Endosulfan II (ug/kg)	Site	0/3 (0.0%)	4.0 - 5.2	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	3.9 - 5.5	--								
			Endosulfan sulfate (ug/kg)	Site	0/3 (0.0%)	4.0 - 5.2	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	3.9 - 5.5	--								
			Endrin (ug/kg)	Site	0/3 (0.0%)	4.0 - 5.2	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	3.9 - 5.5	--								
			Endrin aldehyde (ug/kg)	Site	1/3 (33.3%)	4.0 - 5.2	4.0	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	3.9 - 5.5	--								
			Endrin ketone (ug/kg)	Site	0/3 (0.0%)	4.0 - 5.2	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	3.9 - 5.5	--								
			gamma-BHC (Lindane) (ug/kg)	Site	0/3 (0.0%)	2.1 - 2.7	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 2.9	--								
			gamma-Chlordane (ug/kg)	Site	1/3 (33.3%)	2.6 - 2.7	1.2	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	2.8	0
				Background	5/10 (50.0%)	2.0 - 2.7	0.74 - 2.9								
			Heptachlor (ug/kg)	Site	0/3 (0.0%)	2.1 - 2.7	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 2.9	--								
			Heptachlor epoxide (ug/kg)	Site	1/3 (33.3%)	2.1 - 2.7	1.3	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	2.0 - 2.9	--								
			Methoxychlor (ug/kg)	Site	0/3 (0.0%)	21 - 27	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	20 - 29	--								
			Toxaphene (ug/kg)	Site	0/3 (0.0%)	210 - 270	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	200 - 290	--								
		SVOCs	Acenaphthene (mg/kg)	Site	0/3 (0.0%)	0.40 - 0.52	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.39 - 0.55	--								
			Acenaphthylene (mg/kg)	Site	0/3 (0.0%)	0.40 - 0.52	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.39 - 0.55	--								
			Anthracene (mg/kg)	Site	0/3 (0.0%)	0.40 - 0.52	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.39 - 0.55	--								
			Benzo(a)anthracene (mg/kg)	Site	1/3 (33.3%)	0.40 - 0.52	0.14	N/A	--	--	--	--	Maximum Detect	0.41	0
				Background	3/10 (30.0%)	0.39 - 0.55	0.21 - 0.41								
			Benzo(a)pyrene (mg/kg)	Site	1/3 (33.3%)	0.40 - 0.52	0.17	N/A	--	--	--	--	Maximum Detect	0.41	0
				Background	3/10 (30.0%)	0.39 - 0.55	0.20 - 0.41								
			Benzo(b)fluoranthene (mg/kg)	Site	1/3 (33.3%)	0.40 - 0.52	0.17	N/A	--	--	--	--	Maximum Detect	0.25	0
				Background	3/10 (30.0%)	0.39 - 0.55	0.15 - 0.25								
			Benzo(g,h,i)perylene (mg/kg)	Site	1/3 (33.3%)	0.40 - 0.52	0.13	N/A	--	--	--	--	Maximum Detect	0.23	0
				Background	1/10 (10.0%)	0.39 - 0.55	0.23								
			Benzo(k)fluoranthene (mg/kg)	Site	1/3 (33.3%)	0.40 - 0.52	0.16	N/A	--	--	--	--	Maximum Detect	0.23	0
				Background	3/10 (30.0%)	0.39 - 0.55	0.13 - 0.23								
			Chrysene (mg/kg)	Site	2/3 (66.7%)	0.40	0.18 - 0.41	N/A	--	--	--	--	Maximum Detect	0.26	1
				Background	3/10 (30.0%)	0.39 - 0.55	0.16 - 0.26								
			Dibenz(a,h)anthracene (mg/kg)	Site	0/3 (0.0%)	0.40 - 0.52	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.39 - 0.55	--								
			Fluoranthene (mg/kg)	Site	2/3 (66.7%)	0.40	0.11 - 0.22	N/A	--	--	--	--	Maximum Detect	0.23	0
				Background	3/10 (30.0%)	0.39 - 0.55	0.13 - 0.23								
			Fluorene (mg/kg)	Site	0/3 (0.0%)	0.40 - 0.52	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.39 - 0.55	--								
			Indeno(1,2,3-cd)pyrene (mg/kg)	Site	1/3 (33.3%)	0.40 - 0.52	0.15	N/A	--	--	--	--	Maximum Detect	0.41	0
				Background	3/10 (30.0%)	0.39 - 0.55	0.20 - 0.41								
			Naphthalene (mg/kg)	Site	0/3 (0.0%)	0.40 - 0.52	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.39 - 0.55	--								
			Phenanthrene (mg/kg)	Site	0/3 (0.0%)	0.40 - 0.52	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.39 - 0.55	--								
			Pyrene (mg/kg)	Site	2/3 (66.7%)	0.40	0.12 - 0.20	N/A	--	--	--	--	Maximum Detect	0.27	0
				Background	3/10 (30.0%)	0.39 - 0.55	0.17 - 0.27								
			Total PAHs (mg/kg)	Site	2/3 (66.7%)	0.40	0.26 - 1.5	N/A	--	--	--	--	Maximum Detect	1.2	1
				Background	3/10 (30.0%)	0.39 - 0.55	0.87 - 1.2								

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								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Trespasser (3)	Surface Soil	Metals	Aluminum (mg/kg)	Site	20/20 (100%)	--	11,000 - 19,000	WMW Test (w/out NDs)	136	63	0.946	Yes	Normal 95% UPL(t)	19,000	0
				Background	10/10 (100%)	--	7,500 - 19,000								
			Antimony (mg/kg)	Site	2/20 (10.0%)	6.9 - 8.9	1.3 - 1.4	N/A	--	--	--	--	--	--	2
				Background	0/10 (0.0%)	6.5 - 10	--								
			Arsenic (mg/kg)	Site	20/20 (100%)	--	6.7 - 8.5	WMW Test (w/out NDs)	95.5	63	0.43	Yes	HW Gamma 95% UPL	18	0
				Background	10/10 (100%)	--	4.1 - 22								
			Arsenic (mg/kg)	Site	20/20 (100%)	--	6.7 - 8.5	WMW Test (w/out NDs)					Normal 95% UPL(t)	11	0
			No Outliers	Background	9/9 (100%)	--	4.1 - 10								
			Barium (mg/kg)	Site	20/20 (100%)	--	140 - 210	WMW Test (w/out NDs)	115.5	63	0.759	Yes	Normal 95% UPL(t)	210	0
				Background	10/10 (100%)	--	75 - 190								
			Beryllium (mg/kg)	Site	20/20 (100%)	--	0.64 - 0.98	WMW Test (w/out NDs)	146	63	0.98	Yes	Normal 95% UPL(t)	0.96	1
				Background	10/10 (100%)	--	0.45 - 0.96								
			Cadmium (mg/kg)	Site	20/20 (100%)	--	1.9 - 8.9	WMW Test (w/out NDs)	172	63	0.999	Yes	Normal 95% UPL(t)	3.3	9
				Background	10/10 (100%)	--	0.52 - 3.1								
			Calcium (mg/kg)	Site	20/20 (100%)	--	15,000 - 32,000	WMW Test (w/out NDs)	136	63	0.946	Yes	Normal 95% UPL(t)	40,000	0
				Background	10/10 (100%)	--	1,900 - 34,000								
			Chromium (mg/kg)	Site	20/20 (100%)	--	36 - 56	WMW Test (w/out NDs)	200	63	1	Yes	Normal 95% UPL(t)	40	15
				Background	10/10 (100%)	--	11 - 35								
			Cobalt (mg/kg)	Site	20/20 (100%)	--	7.8 - 12	WMW Test (w/out NDs)	89.5	63	0.33	Yes	Normal 95% UPL(t)	12	1
				Background	10/10 (100%)	--	7.2 - 11								
			Copper (mg/kg)	Site	20/20 (100%)	--	42 - 77	WMW Test (w/out NDs)	192	63	1	Yes	Normal 95% UPL(t)	52	10
				Background	10/10 (100%)	--	12 - 46								
			Cyanide (mg/kg)	Site	0/1 (0.0%)	3.6	--	N/A	--	--	--	--	Maximum Detect	0.87	0
				Background	1/10 (10.0%)	2.9 - 4.4	0.87								
			Iron (mg/kg)	Site	20/20 (100%)	--	22,000 - 29,000	WMW Test (w/out NDs)	114.5	63	0.745	Yes	Normal 95% UPL(t)	32,000	0
				Background	10/10 (100%)	--	15,000 - 29,000								
			Lead (mg/kg)	Site	20/20 (100%)	--	39 - 73	WMW Test (w/out NDs)	200	63	1	Yes	Normal 95% UPL(t)	44	14
				Background	10/10 (100%)	--	11 - 38								
			Magnesium (mg/kg)	Site	20/20 (100%)	--	8,200 - 13,000	WMW Test (w/out NDs)	135	63	0.941	Yes	Normal 95% UPL(t)	15,000	0
				Background	10/10 (100%)	--	1,900 - 13,000								
			Manganese (mg/kg)	Site	20/20 (100%)	--	320 - 840	WMW Test (w/out NDs)	89.5	63	0.33	Yes	Normal 95% UPL(t)	930	0
				Background	10/10 (100%)	--	370 - 850								
			Mercury (mg/kg)	Site	20/20 (100%)	--	0.14 - 0.25	N/A	--	--	--	--	Nonparametric 95% UPL	0.22	4
				Background	5/10 (50.0%)	0.11 - 0.18	0.069 - 0.22								
			Nickel (mg/kg)	Site	20/20 (100%)	--	27 - 39	WMW Test (w/out NDs)	184.5	63	1	Yes	Nonparametric 95% UPL	33	6
				Background	10/10 (100%)	--	14 - 33								
			Potassium (mg/kg)	Site	20/20 (100%)	--	1,700 - 2,800	WMW Test (w/out NDs)	131.5	63	0.92	Yes	Normal 95% UPL(t)	2,800	0
				Background	10/10 (100%)	--	940 - 2,400								
			Selenium (mg/kg)	Site	20/20 (100%)	--	1.1 - 1.8	N/A	--	--	--	--	--	--	20
				Background	0/10 (0.0%)	3.8 - 5.9	--								
			Silver (mg/kg)	Site	20/20 (100%)	--	0.74 - 1.2	N/A	--	--	--	--	Nonparametric 95% UPL	1.7	0
				Background	6/10 (60.0%)	1.1 - 1.7	0.13 - 0.81								
			Sodium (mg/kg)	Site	6/20 (30.0%)	570 - 730	140 - 450	N/A	--	--	--	--	Nonparametric 95% UPL	710	0
				Background	6/10 (60.0%)	540 - 710	200 - 230								
			Thallium (mg/kg)	Site	0/20 (0.0%)	2.9 - 3.7	--	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	1.2	0
				Background	9/10 (90.0%)	2.7	0.61 - 1.1								
			Vanadium (mg/kg)	Site	20/20 (100%)	--	24 - 36	WMW Test (w/out NDs)	144.5	63	0.976	Yes	Normal 95% UPL(t)	40	0
				Background	10/10 (100%)	--	21 - 42								
			Zinc (mg/kg)	Site	20/20 (100%)	--	200 - 1,200	WMW Test (w/out NDs)	199.5	63	1	Yes	Normal 95% UPL(t)	220	14
				Background	10/10 (100%)	--	42 - 200								
		Miscellaneous-SPLP	Fluoride (mg/L)	Site	1/1 (100%)	--	0.92	N/A	--	--	--	--	Normal 95% UPL(t)	0.71	1
				Background	10/10 (100%)	--	0.40 - 0.71								
		PCBs	Aroclor 1016 (mg/kg)	Site	0/1 (0.0%)	0.048	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.038 - 0.058	--								
			Aroclor 1221 (mg/kg)	Site	0/1 (0.0%)	0.097	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.078 - 0.12	--								
			Aroclor 1232 (mg/kg)	Site	0/1 (0.0%)	0.048	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.038 - 0.058	--								
			Aroclor 1242 (mg/kg)	Site	0/1 (0.0%)	0.048	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.038 - 0.058	--								
			Aroclor 1248 (mg/kg)	Site	0/1 (0.0%)	0.048	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.038 - 0.058	--								

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								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Trespasser (3)	Surface Soil	PCBs	Aroclor 1254 (mg/kg)	Site	0/1 (0.0%)	0.048	--	N/A	--	--	--	--	Maximum Detect	0.044	0
				Background	3/10 (30.0%)	0.038 - 0.058	0.018 - 0.044								
			Aroclor 1260 (mg/kg)	Site	0/1 (0.0%)	0.048	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.038 - 0.058	--								
			Total PCBs (mg/kg)	Site	0/1 (0.0%)	0.097	--	N/A	--	--	--	--	Maximum Detect	0.044	0
				Background	3/10 (30.0%)	0.078 - 0.12	0.018 - 0.044								
		Pesticides/Herbicides	4,4'-DDD (ug/kg)	Site	0/1 (0.0%)	4.8	--	N/A	--	--	--	--	Maximum Detect	1.5	0
				Background	1/10 (10.0%)	3.8 - 5.8	1.5								
			4,4'-DDE (ug/kg)	Site	0/1 (0.0%)	4.8	--	N/A	--	--	--	--	Maximum Detect	2.3	0
				Background	4/10 (40.0%)	3.8 - 5.8	1.1 - 2.3								
			4,4'-DDT (ug/kg)	Site	1/1 (100%)	--	6.1	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	3.8 - 5.8	--								
			Aldrin (ug/kg)	Site	0/1 (0.0%)	2.5	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 3.0	--								
			Alpha-BHC (ug/kg)	Site	0/1 (0.0%)	2.5	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 3.0	--								
			Alpha-Chlordane (ug/kg)	Site	0/1 (0.0%)	2.5	--	N/A	--	--	--	--	Maximum Detect	3.9	0
				Background	3/10 (30.0%)	2.0 - 2.9	0.68 - 3.9								
			Beta-BHC (ug/kg)	Site	1/1 (100%)	--	28	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	2.0 - 3.0	--								
			delta-BHC (ug/kg)	Site	0/1 (0.0%)	2.5	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 3.0	--								
			Dieldrin (ug/kg)	Site	0/1 (0.0%)	4.8	--	N/A	--	--	--	--	Nonparametric 95% UPL	5.8	0
				Background	7/10 (70.0%)	3.8 - 5.8	1.3 - 4.6								
			Endosulfan I (ug/kg)	Site	0/1 (0.0%)	2.5	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 3.0	--								
			Endosulfan II (ug/kg)	Site	0/1 (0.0%)	4.8	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	3.8 - 5.8	--								
			Endosulfan sulfate (ug/kg)	Site	1/1 (100%)	--	14	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	3.8 - 5.8	--								
			Endrin (ug/kg)	Site	1/1 (100%)	--	6.1	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	3.8 - 5.8	--								
			Endrin aldehyde (ug/kg)	Site	1/1 (100%)	--	13	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	3.8 - 5.8	--								
			Endrin ketone (ug/kg)	Site	1/1 (100%)	--	24	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	3.8 - 5.8	--								
			gamma-BHC (Lindane) (ug/kg)	Site	0/1 (0.0%)	2.5	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 3.0	--								
			gamma-Chlordane (ug/kg)	Site	1/1 (100%)	--	7.1	N/A	--	--	--	--	Nonparametric 95% UPL	2.9	1
				Background	5/10 (50.0%)	2.0 - 2.9	0.75 - 1.5								
			Heptachlor (ug/kg)	Site	0/1 (0.0%)	2.5	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 3.0	--								
			Heptachlor epoxide (ug/kg)	Site	0/1 (0.0%)	2.5	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 3.0	--								
			Methoxychlor (ug/kg)	Site	1/1 (100%)	--	82	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	20 - 30	--								
			Toxaphene (ug/kg)	Site	0/1 (0.0%)	250	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	200 - 300	--								
		SVOCs	Acenaphthene (mg/kg)	Site	0/1 (0.0%)	0.96	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.38 - 0.58	--								
			Acenaphthylene (mg/kg)	Site	1/1 (100%)	--	0.40	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	0.38 - 0.58	--								
			Anthracene (mg/kg)	Site	1/1 (100%)	--	1.3	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	0.38 - 0.58	--								
			Benzo(a)anthracene (mg/kg)	Site	1/1 (100%)	--	7.7	N/A	--	--	--	--	Maximum Detect	0.17	1
				Background	1/10 (10.0%)	0.38 - 0.58	0.17								
			Benzo(a)pyrene (mg/kg)	Site	1/1 (100%)	--	5.6	N/A	--	--	--	--	Maximum Detect	0.17	1
				Background	1/10 (10.0%)	0.38 - 0.58	0.17								
			Benzo(b)fluoranthene (mg/kg)	Site	1/1 (100%)	--	10	N/A	--	--	--	--	Maximum Detect	0.25	1
				Background	1/10 (10.0%)	0.38 - 0.58	0.25								
			Benzo(g,h,i)perylene (mg/kg)	Site	1/1 (100%)	--	0.98	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	0.38 - 0.58	--								
			Benzo(k)fluoranthene (mg/kg)	Site	1/1 (100%)	--	7.1	N/A	--	--	--	--	Maximum Detect	0.20	1
				Background	1/10 (10.0%)	0.38 - 0.58	0.20								

Table A-1
Hypothesis Testing and Background Screening Levels - Soil
OU5 Baseline Human Health Risk Assessment
DePue Lake, DePue, Illinois

								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Trespasser (3)	Surface Soil	SVOCs	Chrysene (mg/kg)	Site	1/1 (100%)	--	10	N/A	--	--	--	--	Maximum Detect	0.25	1
				Background	1/10 (10.0%)	0.38 - 0.58	0.25								
			Dibenz(a,h)anthracene (mg/kg)	Site	1/1 (100%)	--	1.1	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	0.38 - 0.58	--								
			Fluoranthene (mg/kg)	Site	1/1 (100%)	--	5.3	N/A	--	--	--	--	Maximum Detect	0.20	1
				Background	1/10 (10.0%)	0.38 - 0.58	0.20								
			Fluorene (mg/kg)	Site	0/1 (0.0%)	0.96	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.38 - 0.58	--								
			Indeno(1,2,3-cd)pyrene (mg/kg)	Site	1/1 (100%)	--	3.2	N/A	--	--	--	--	Maximum Detect	0.15	1
				Background	1/10 (10.0%)	0.38 - 0.58	0.15								
			Naphthalene (mg/kg)	Site	0/1 (0.0%)	0.96	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.38 - 0.58	--								
			Phenanthrene (mg/kg)	Site	0/1 (0.0%)	0.96	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.38 - 0.58	--								
			Pyrene (mg/kg)	Site	1/1 (100%)	--	13	N/A	--	--	--	--	Maximum Detect	0.25	1
				Background	1/10 (10.0%)	0.38 - 0.58	0.25								
			Total PAHs (mg/kg)	Site	1/1 (100%)	--	65	N/A	--	--	--	--	Maximum Detect	1.6	1
				Background	1/10 (10.0%)	0.38 - 0.58	1.6								
	Depth-weighted Soil (0-2 ft)	Metals	Aluminum (mg/kg)	Site	20/20 (100%)	--	12,000 - 20,000	WMW Test (w/out NDs)	154.5	63	0.992	Yes	Normal 95% UPL(t)	19,000	3
				Background	10/10 (100%)	--	8,800 - 17,000								
			Antimony (mg/kg)	Site	2/20 (10.0%)	7.3 - 8.9	1.5 - 5.8	N/A	--	--	--	--	--	--	2
				Background	0/10 (0.0%)	6.8 - 10	--								
			Arsenic (mg/kg)	Site	20/20 (100%)	--	7.0 - 11	WMW Test (w/out NDs)	135	63	0.941	Yes	Normal 95% UPL(t)	14	0
				Background	10/10 (100%)	--	4.2 - 14								
			Arsenic (mg/kg)	Site	20/20 (100%)	--	7.0 - 11	WMW Test (w/out NDs)					Normal 95% UPL(t)	13	0
			No Outliers	Background	9/9 (100%)	--	4.2 - 14								
			Barium (mg/kg)	Site	20/20 (100%)	--	150 - 290	WMW Test (w/out NDs)	167	63	0.999	Yes	Normal 95% UPL(t)	220	3
				Background	10/10 (100%)	--	81 - 200								
			Beryllium (mg/kg)	Site	20/20 (100%)	--	0.74 - 1.0	WMW Test (w/out NDs)	178	63	1	Yes	Normal 95% UPL(t)	0.92	5
				Background	10/10 (100%)	--	0.49 - 0.87								
			Cadmium (mg/kg)	Site	20/20 (100%)	--	3.3 - 8.9	WMW Test (w/out NDs)	184	63	1	Yes	HW Gamma 95% UPL	6.0	9
				Background	10/10 (100%)	--	0.56 - 5.4								
			Calcium (mg/kg)	Site	20/20 (100%)	--	13,000 - 26,000	WMW Test (w/out NDs)	129	63	0.903	Yes	Normal 95% UPL(t)	36,000	0
				Background	10/10 (100%)	--	1,900 - 32,000								
			Chromium (mg/kg)	Site	20/20 (100%)	--	47 - 82	WMW Test (w/out NDs)	192	63	1	Yes	Normal 95% UPL(t)	58	12
				Background	10/10 (100%)	--	13 - 60								
			Cobalt (mg/kg)	Site	20/20 (100%)	--	8.0 - 10	WMW Test (w/out NDs)	113	63	0.724	Yes	HW Gamma 95% UPL	12	0
				Background	10/10 (100%)	--	8.1 - 13								
			Copper (mg/kg)	Site	20/20 (100%)	--	50 - 81	WMW Test (w/out NDs)	193	63	1	Yes	Normal 95% UPL(t)	63	13
				Background	10/10 (100%)	--	13 - 60								
			Cyanide (mg/kg)	Site	0/1 (0.0%)	3.7	--	N/A	--	--	--	--	Maximum Detect	3.1	0
				Background	1/10 (10.0%)	2.9 - 4.2	3.1								
			Iron (mg/kg)	Site	20/20 (100%)	--	23,000 - 29,000	WMW Test (w/out NDs)	140	63	0.963	Yes	Normal 95% UPL(t)	32,000	0
				Background	10/10 (100%)	--	15,000 - 29,000								
			Lead (mg/kg)	Site	20/20 (100%)	--	48 - 81	WMW Test (w/out NDs)	191	63	1	Yes	Normal 95% UPL(t)	61	13
				Background	10/10 (100%)	--	10 - 62								
			Magnesium (mg/kg)	Site	20/20 (100%)	--	7,600 - 11,000	WMW Test (w/out NDs)	135.5	63	0.943	Yes	Normal 95% UPL(t)	14,000	0
				Background	10/10 (100%)	--	2,300 - 12,000								
			Manganese (mg/kg)	Site	20/20 (100%)	--	400 - 1,100	WMW Test (w/out NDs)	101.5	63	0.535	Yes	Normal 95% UPL(t)	970	2
				Background	10/10 (100%)	--	450 - 930								
			Mercury (mg/kg)	Site	20/20 (100%)	--	0.15 - 0.51	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	0.34	4
				Background	6/10 (60.0%)	0.12 - 0.17	0.095 - 0.33								
			Nickel (mg/kg)	Site	20/20 (100%)	--	34 - 42	WMW Test (w/out NDs)	189	63	1	Yes	Normal 95% UPL(t)	39	8
				Background	10/10 (100%)	--	16 - 39								
			Potassium (mg/kg)	Site	20/20 (100%)	--	1,600 - 2,500	WMW Test (w/out NDs)	146	63	0.98	Yes	Normal 95% UPL(t)	2,600	0
				Background	10/10 (100%)	--	1,100 - 2,400								
			Selenium (mg/kg)	Site	20/20 (100%)	--	1.0 - 2.1	N/A	--	--	--	--	--	--	20
				Background	0/10 (0.0%)	4.0 - 5.7	--								
			Silver (mg/kg)	Site	20/20 (100%)	--	0.82 - 2.0	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	1.6	5
				Background	7/10 (70.0%)	1.1 - 1.4	0.13 - 1.4								
			Sodium (mg/kg)	Site	9/20 (45.0%)	610 - 690	160 - 510	Gehan Test	-0.777	-1.645	0.219	Yes	95% Kaplan-Meier UPL(t)	710	0
				Background	8/10 (80.0%)	560 - 600	200 - 650								
			Thallium (mg/kg)	Site	0/20 (0.0%)	3.0 - 3.7	--	N/A	--	--	--	--	Nonparametric 95% UPL	3.0	0
				Background	9/10 (90.0%)	2.9	0.62 - 3.0								

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								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Trespasser (3)	Depth-weighted Soil (0-2 ft)	Metals	Vanadium (mg/kg)	Site	20/20 (100%)	--	26 - 39	WMW Test (w/out NDs)	153	63	0.991	Yes	Normal 95% UPL(t)	39	1
				Background	10/10 (100%)	--	22 - 40								
			Zinc (mg/kg)	Site	20/20 (100%)	--	240 - 880	WMW Test (w/out NDs)	198	63	1	Yes	Normal 95% UPL(t)	280	18
				Background	10/10 (100%)	--	46 - 290								
		Miscellaneous-SPLP	Fluoride (mg/L)	Site	1/1 (100%)	--	1.1	N/A	--	--	--	--	Normal 95% UPL(t)	0.87	1
				Background	10/10 (100%)	--	0.24 - 0.85								
		PCBs	Aroclor 1016 (mg/kg)	Site	0/1 (0.0%)	0.049	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.039 - 0.055	--								
			Aroclor 1221 (mg/kg)	Site	0/1 (0.0%)	0.099	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.079 - 0.11	--								
			Aroclor 1232 (mg/kg)	Site	0/1 (0.0%)	0.049	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.039 - 0.055	--								
			Aroclor 1242 (mg/kg)	Site	0/1 (0.0%)	0.049	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.039 - 0.055	--								
			Aroclor 1248 (mg/kg)	Site	0/1 (0.0%)	0.049	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.039 - 0.055	--								
			Aroclor 1254 (mg/kg)	Site	0/1 (0.0%)	0.049	--	N/A	--	--	--	--	Maximum Detect	0.064	0
				Background	3/10 (30.0%)	0.039 - 0.055	0.029 - 0.064								
			Aroclor 1260 (mg/kg)	Site	0/1 (0.0%)	0.049	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.039 - 0.055	--								
			Total PCBs (mg/kg)	Site	0/1 (0.0%)	0.099	--	N/A	--	--	--	--	Maximum Detect	0.064	0
				Background	3/10 (30.0%)	0.079 - 0.11	0.029 - 0.064								
		Pesticides/Herbicides	4,4'-DDD (ug/kg)	Site	1/1 (100%)	--	2.4	N/A	--	--	--	--	Maximum Detect	4.1	0
				Background	3/10 (30.0%)	3.9 - 5.5	2.1 - 4.1								
			4,4'-DDE (ug/kg)	Site	0/1 (0.0%)	4.9	--	N/A	--	--	--	--	Maximum Detect	4.3	0
				Background	4/10 (40.0%)	3.9 - 5.5	1.1 - 4.3								
			4,4'-DDT (ug/kg)	Site	1/1 (100%)	--	4.3	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	3.9 - 5.5	--								
			Aldrin (ug/kg)	Site	0/1 (0.0%)	2.5	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 2.9	--								
			Alpha-BHC (ug/kg)	Site	0/1 (0.0%)	2.5	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 2.9	--								
			Alpha-Chlordane (ug/kg)	Site	1/1 (100%)	--	2.4	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	2.7	0
				Background	5/10 (50.0%)	2.0 - 2.7	0.73 - 3.1								
			Beta-BHC (ug/kg)	Site	1/1 (100%)	--	8.9	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	2.0 - 2.9	--								
			delta-BHC (ug/kg)	Site	0/1 (0.0%)	2.5	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 2.9	--								
			Dieldrin (ug/kg)	Site	1/1 (100%)	--	6.9	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	5.3	1
				Background	7/10 (70.0%)	3.9 - 5.5	2.7 - 5.1								
			Endosulfan I (ug/kg)	Site	0/1 (0.0%)	2.5	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 2.9	--								
			Endosulfan II (ug/kg)	Site	0/1 (0.0%)	4.9	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	3.9 - 5.5	--								
			Endosulfan sulfate (ug/kg)	Site	1/1 (100%)	--	7.2	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	3.9 - 5.5	--								
			Endrin (ug/kg)	Site	1/1 (100%)	--	5.2	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	3.9 - 5.5	--								
			Endrin aldehyde (ug/kg)	Site	1/1 (100%)	--	6.9	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	3.9 - 5.5	--								
			Endrin ketone (ug/kg)	Site	1/1 (100%)	--	10	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	3.9 - 5.5	--								
			gamma-BHC (Lindane) (ug/kg)	Site	0/1 (0.0%)	2.5	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 2.9	--								
			gamma-Chlordane (ug/kg)	Site	1/1 (100%)	--	4.6	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	2.8	1
				Background	5/10 (50.0%)	2.0 - 2.7	0.74 - 2.9								
			Heptachlor (ug/kg)	Site	0/1 (0.0%)	2.5	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 2.9	--								
			Heptachlor epoxide (ug/kg)	Site	0/1 (0.0%)	2.5	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 2.9	--								
			Methoxychlor (ug/kg)	Site	1/1 (100%)	--	39	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	20 - 29	--								
			Toxaphene (ug/kg)	Site	0/1 (0.0%)	250	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	200 - 290	--								

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DePue Lake, DePue, Illinois

								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Trespasser (3)	Depth-weighted Soil (0-2 ft)	SVOCs	Acenaphthene (mg/kg)	Site	0/1 (0.0%)	0.61	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.39 - 0.55	--								
			Acenaphthylene (mg/kg)	Site	1/1 (100%)	--	0.47	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	0.39 - 0.55	--								
			Anthracene (mg/kg)	Site	1/1 (100%)	--	0.69	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	0.39 - 0.55	--								
			Benzo(a)anthracene (mg/kg)	Site	1/1 (100%)	--	2.3	N/A	--	--	--	--	Maximum Detect	0.41	1
				Background	3/10 (30.0%)	0.39 - 0.55	0.21 - 0.41								
			Benzo(a)pyrene (mg/kg)	Site	1/1 (100%)	--	1.8	N/A	--	--	--	--	Maximum Detect	0.41	1
				Background	3/10 (30.0%)	0.39 - 0.55	0.20 - 0.41								
			Benzo(b)fluoranthene (mg/kg)	Site	1/1 (100%)	--	2.9	N/A	--	--	--	--	Maximum Detect	0.25	1
				Background	3/10 (30.0%)	0.39 - 0.55	0.15 - 0.25								
			Benzo(g,h,i)perylene (mg/kg)	Site	1/1 (100%)	--	0.61	N/A	--	--	--	--	Maximum Detect	0.23	1
				Background	1/10 (10.0%)	0.39 - 0.55	0.23								
			Benzo(k)fluoranthene (mg/kg)	Site	1/1 (100%)	--	2.1	N/A	--	--	--	--	Maximum Detect	0.23	1
				Background	3/10 (30.0%)	0.39 - 0.55	0.13 - 0.23								
			Chrysene (mg/kg)	Site	1/1 (100%)	--	2.8	N/A	--	--	--	--	Maximum Detect	0.26	1
				Background	3/10 (30.0%)	0.39 - 0.55	0.16 - 0.26								
			Dibenz(a,h)anthracene (mg/kg)	Site	1/1 (100%)	--	0.64	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	0.39 - 0.55	--								
			Fluoranthene (mg/kg)	Site	1/1 (100%)	--	1.4	N/A	--	--	--	--	Maximum Detect	0.23	1
				Background	3/10 (30.0%)	0.39 - 0.55	0.13 - 0.23								
			Fluorene (mg/kg)	Site	0/1 (0.0%)	0.61	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.39 - 0.55	--								
			Indeno(1,2,3-cd)pyrene (mg/kg)	Site	1/1 (100%)	--	1.2	N/A	--	--	--	--	Maximum Detect	0.41	1
				Background	3/10 (30.0%)	0.39 - 0.55	0.20 - 0.41								
			Naphthalene (mg/kg)	Site	0/1 (0.0%)	0.61	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.39 - 0.55	--								
			Phenanthrene (mg/kg)	Site	0/1 (0.0%)	0.61	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.39 - 0.55	--								
			Pyrene (mg/kg)	Site	1/1 (100%)	--	3.3	N/A	--	--	--	--	Maximum Detect	0.27	1
				Background	3/10 (30.0%)	0.39 - 0.55	0.17 - 0.27								
			Total PAHs (mg/kg)	Site	1/1 (100%)	--	17	N/A	--	--	--	--	Maximum Detect	1.2	1
				Background	3/10 (30.0%)	0.39 - 0.55	0.87 - 1.2								
Utility Maintenance Worker (1B)	Surface Soil	Metals	Aluminum (mg/kg)	Site	13/13 (100%)	--	7,500 - 20,000	WMW Test (w/out NDs)	50	38	0.184	Yes	Normal 95% UPL(t)	19,000	1
				Background	10/10 (100%)	--	7,500 - 19,000								
			Antimony (mg/kg)	Site	3/11 (27.3%)	10 - 20	0.78 - 5.8	N/A	--	--	--	--	--	--	3
				Background	0/10 (0.0%)	6.5 - 10	--								
			Arsenic (mg/kg)	Site	13/13 (100%)	--	5.4 - 390	WMW Test (w/out NDs)	111	38	0.998	Yes	HW Gamma 95% UPL	18	9
				Background	10/10 (100%)	--	4.1 - 22								
			Arsenic (mg/kg)	Site	13/13 (100%)	--	5.4 - 390	WMW Test (w/out NDs)					Normal 95% UPL(t)	11	10
			No Outliers	Background	9/9 (100%)	--	4.1 - 10								
			Barium (mg/kg)	Site	13/13 (100%)	--	300 - 8,000	WMW Test (w/out NDs)	130	38	1	Yes	Normal 95% UPL(t)	210	13
				Background	10/10 (100%)	--	75 - 190								
			Beryllium (mg/kg)	Site	13/13 (100%)	--	0.56 - 1.0	WMW Test (w/out NDs)	83	38	0.874	Yes	Normal 95% UPL(t)	0.96	2
				Background	10/10 (100%)	--	0.45 - 0.96								
			Cadmium (mg/kg)	Site	13/13 (100%)	--	13 - 2,500	WMW Test (w/out NDs)	130	38	1	Yes	Normal 95% UPL(t)	3.3	13
				Background	10/10 (100%)	--	0.52 - 3.1								
			Calcium (mg/kg)	Site	13/13 (100%)	--	12,000 - 95,000	WMW Test (w/out NDs)	93	38	0.961	Yes	Normal 95% UPL(t)	40,000	4
				Background	10/10 (100%)	--	1,900 - 34,000								
			Chromium (mg/kg)	Site	11/13 (84.6%)	19 - 20	19 - 53	Gehan Test	0.156	-1.645	0.562	Yes	Normal 95% UPL(t)	40	1
				Background	10/10 (100%)	--	11 - 35								
			Cobalt (mg/kg)	Site	13/13 (100%)	--	7.5 - 19	WMW Test (w/out NDs)	98.5	38	0.983	Yes	Normal 95% UPL(t)	12	6
				Background	10/10 (100%)	--	7.2 - 11								
			Copper (mg/kg)	Site	13/13 (100%)	--	54 - 2,200	WMW Test (w/out NDs)	130	38	1	Yes	Normal 95% UPL(t)	52	13
				Background	10/10 (100%)	--	12 - 46								
			Cyanide (mg/kg)	Site	2/3 (66.7%)	4.2	0.94 - 2.6	N/A	--	--	--	--	Maximum Detect	0.87	2
				Background	1/10 (10.0%)	2.9 - 4.4	0.87								
			Iron (mg/kg)	Site	13/13 (100%)	--	18,000 - 50,000	WMW Test (w/out NDs)	92.5	38	0.959	Yes	Normal 95% UPL(t)	32,000	5
				Background	10/10 (100%)	--	15,000 - 29,000								
			Lead (mg/kg)	Site	13/13 (100%)	--	81 - 13,000	WMW Test (w/out NDs)	130	38	1	Yes	Normal 95% UPL(t)	44	13
				Background	10/10 (100%)	--	11 - 38								
			Magnesium (mg/kg)	Site	13/13 (100%)	--	3,800 - 15,000	WMW Test (w/out NDs)	57	38	0.321	Yes	Normal 95% UPL(t)	15,000	0
				Background	10/10 (100%)	--	1,900 - 13,000								

Table A-1
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DePue Lake, DePue, Illinois

								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Utility Maintenance Worker (1B)	Surface Soil	Metals	Manganese (mg/kg)	Site	13/13 (100%)	--	360 - 1,600	WMW Test (w/out NDs)	86	38	0.909	Yes	Normal 95% UPL(t)	930	3
				Background	10/10 (100%)	--	370 - 850								
			Mercury (mg/kg)	Site	13/13 (100%)	--	0.11 - 6.8	N/A	--	--	--	--	Nonparametric 95% UPL	0.22	9
				Background	5/10 (50.0%)	0.11 - 0.18	0.069 - 0.22								
			Nickel (mg/kg)	Site	13/13 (100%)	--	17 - 35	WMW Test (w/out NDs)	83	38	0.874	Yes	Nonparametric 95% UPL	33	2
				Background	10/10 (100%)	--	14 - 33								
			Potassium (mg/kg)	Site	13/13 (100%)	--	1,100 - 2,300	WMW Test (w/out NDs)	41	38	0.0725	Yes	Normal 95% UPL(t)	2,800	0
				Background	10/10 (100%)	--	940 - 2,400								
			Selenium (mg/kg)	Site	13/13 (100%)	--	1.9 - 14	N/A	--	--	--	--	--	--	13
				Background	0/10 (0.0%)	3.8 - 5.9	--								
			Silver (mg/kg)	Site	13/13 (100%)	--	0.58 - 69	N/A	--	--	--	--	Nonparametric 95% UPL	1.7	8
				Background	6/10 (60.0%)	1.1 - 1.7	0.13 - 0.81								
			Sodium (mg/kg)	Site	7/13 (53.8%)	700 - 16,000	360 - 5,000	N/A	--	--	--	--	Nonparametric 95% UPL	710	4
				Background	6/10 (60.0%)	540 - 710	200 - 230								
			Thallium (mg/kg)	Site	4/13 (30.8%)	4.0 - 8.9	0.58 - 1.6	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	1.2	1
				Background	9/10 (90.0%)	2.7	0.61 - 1.1								
			Vanadium (mg/kg)	Site	13/13 (100%)	--	22 - 37	WMW Test (w/out NDs)	86	38	0.909	Yes	Normal 95% UPL(t)	40	0
				Background	10/10 (100%)	--	21 - 42								
			Zinc (mg/kg)	Site	13/13 (100%)	--	1,300 - 150,000	WMW Test (w/out NDs)	130	38	1	Yes	Normal 95% UPL(t)	220	13
				Background	10/10 (100%)	--	42 - 200								
		Miscellaneous-SPLP	Fluoride (mg/L)	Site	3/3 (100%)	--	0.30 - 1.5	N/A	--	--	--	--	Normal 95% UPL(t)	0.71	1
				Background	10/10 (100%)	--	0.40 - 0.71								
		PCBs	Aroclor 1016 (mg/kg)	Site	0/3 (0.0%)	0.055 - 0.065	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.038 - 0.058	--								
			Aroclor 1221 (mg/kg)	Site	0/3 (0.0%)	0.11 - 0.13	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.078 - 0.12	--								
			Aroclor 1232 (mg/kg)	Site	0/3 (0.0%)	0.055 - 0.065	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.038 - 0.058	--								
			Aroclor 1242 (mg/kg)	Site	0/3 (0.0%)	0.055 - 0.065	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.038 - 0.058	--								
			Aroclor 1248 (mg/kg)	Site	0/3 (0.0%)	0.055 - 0.065	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.038 - 0.058	--								
			Aroclor 1254 (mg/kg)	Site	1/2 (50.0%)	0.055	0.15	N/A	--	--	--	--	Maximum Detect	0.044	1
				Background	3/10 (30.0%)	0.038 - 0.058	0.018 - 0.044								
			Aroclor 1260 (mg/kg)	Site	0/3 (0.0%)	0.055 - 0.065	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.038 - 0.058	--								
			Total PCBs (mg/kg)	Site	1/3 (33.3%)	0.11 - 0.11	0.15	N/A	--	--	--	--	Maximum Detect	0.044	1
				Background	3/10 (30.0%)	0.078 - 0.12	0.018 - 0.044								
		Pesticides/Herbicides	4,4'-DDD (ug/kg)	Site	1/3 (33.3%)	5.5 - 6.5	1.3	N/A	--	--	--	--	Maximum Detect	1.5	0
				Background	1/10 (10.0%)	3.8 - 5.8	1.5								
			4,4'-DDE (ug/kg)	Site	1/3 (33.3%)	5.5 - 6.5	2.1	N/A	--	--	--	--	Maximum Detect	2.3	0
				Background	4/10 (40.0%)	3.8 - 5.8	1.1 - 2.3								
			4,4'-DDT (ug/kg)	Site	2/3 (66.7%)	6.5	2.5 - 10	N/A	--	--	--	--	--	--	2
				Background	0/10 (0.0%)	3.8 - 5.8	--								
			Aldrin (ug/kg)	Site	0/3 (0.0%)	2.8 - 3.3	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 3.0	--								
			Alpha-BHC (ug/kg)	Site	0/3 (0.0%)	2.8 - 3.3	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 3.0	--								
			Alpha-Chlordane (ug/kg)	Site	1/3 (33.3%)	2.8 - 3.3	1.1	N/A	--	--	--	--	Maximum Detect	3.9	0
				Background	3/10 (30.0%)	2.0 - 2.9	0.68 - 3.9								
			Beta-BHC (ug/kg)	Site	0/3 (0.0%)	2.8 - 3.3	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 3.0	--								
			delta-BHC (ug/kg)	Site	0/3 (0.0%)	2.8 - 3.3	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 3.0	--								
			Dieldrin (ug/kg)	Site	1/3 (33.3%)	5.5 - 5.5	8.8	N/A	--	--	--	--	Nonparametric 95% UPL	5.8	1
				Background	7/10 (70.0%)	3.8 - 5.8	1.3 - 4.6								
			Endosulfan I (ug/kg)	Site	0/3 (0.0%)	2.8 - 3.3	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 3.0	--								
			Endosulfan II (ug/kg)	Site	0/3 (0.0%)	5.5 - 6.5	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	3.8 - 5.8	--								
			Endosulfan sulfate (ug/kg)	Site	0/3 (0.0%)	5.5 - 6.5	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	3.8 - 5.8	--								
			Endrin (ug/kg)	Site	0/3 (0.0%)	5.5 - 6.5	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	3.8 - 5.8	--								

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								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Utility Maintenance Worker (1B)	Surface Soil	Pesticides/Herbicides	Endrin aldehyde (ug/kg)	Site	0/3 (0.0%)	5.5 - 6.5	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	3.8 - 5.8	--								
			Endrin ketone (ug/kg)	Site	1/3 (33.3%)	5.5 - 6.5	6.4	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	3.8 - 5.8	--								
			gamma-BHC (Lindane) (ug/kg)	Site	0/3 (0.0%)	2.8 - 3.3	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 3.0	--								
			gamma-Chlordane (ug/kg)	Site	0/3 (0.0%)	2.8 - 3.3	--	N/A	--	--	--	--	Nonparametric 95% UPL	2.9	0
				Background	5/10 (50.0%)	2.0 - 2.9	0.75 - 1.5								
			Heptachlor (ug/kg)	Site	0/3 (0.0%)	2.8 - 3.3	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 3.0	--								
			Heptachlor epoxide (ug/kg)	Site	0/3 (0.0%)	2.8 - 3.3	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 3.0	--								
			Methoxychlor (ug/kg)	Site	0/3 (0.0%)	28 - 33	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	20 - 30	--								
			Toxaphene (ug/kg)	Site	0/3 (0.0%)	280 - 330	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	200 - 300	--								
		SVOCs	Acenaphthene (mg/kg)	Site	0/3 (0.0%)	0.55 - 1.1	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.38 - 0.58	--								
			Acenaphthylene (mg/kg)	Site	0/3 (0.0%)	0.55 - 1.1	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.38 - 0.58	--								
			Anthracene (mg/kg)	Site	0/3 (0.0%)	0.55 - 1.1	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.38 - 0.58	--								
			Benzo(a)anthracene (mg/kg)	Site	2/3 (66.7%)	0.55	0.22 - 0.76	N/A	--	--	--	--	Maximum Detect	0.17	2
				Background	1/10 (10.0%)	0.38 - 0.58	0.17								
			Benzo(a)pyrene (mg/kg)	Site	2/3 (66.7%)	0.55	0.26 - 0.95	N/A	--	--	--	--	Maximum Detect	0.17	2
				Background	1/10 (10.0%)	0.38 - 0.58	0.17								
			Benzo(b)fluoranthene (mg/kg)	Site	2/3 (66.7%)	0.55	0.34 - 1.2	N/A	--	--	--	--	Maximum Detect	0.25	2
				Background	1/10 (10.0%)	0.38 - 0.58	0.25								
			Benzo(g,h,i)perylene (mg/kg)	Site	2/3 (66.7%)	0.55	0.17 - 0.37	N/A	--	--	--	--	--	--	2
				Background	0/10 (0.0%)	0.38 - 0.58	--								
			Benzo(k)fluoranthene (mg/kg)	Site	2/3 (66.7%)	0.55	0.25 - 0.90	N/A	--	--	--	--	Maximum Detect	0.20	2
				Background	1/10 (10.0%)	0.38 - 0.58	0.20								
			Chrysene (mg/kg)	Site	3/3 (100%)	--	0.11 - 1.3	N/A	--	--	--	--	Maximum Detect	0.25	2
				Background	1/10 (10.0%)	0.38 - 0.58	0.25								
			Dibenz(a,h)anthracene (mg/kg)	Site	1/3 (33.3%)	0.55 - 0.65	0.35	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	0.38 - 0.58	--								
			Fluoranthene (mg/kg)	Site	3/3 (100%)	--	0.12 - 1.8	N/A	--	--	--	--	Maximum Detect	0.20	2
				Background	1/10 (10.0%)	0.38 - 0.58	0.20								
			Fluorene (mg/kg)	Site	0/3 (0.0%)	0.55 - 1.1	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.38 - 0.58	--								
			Indeno(1,2,3-cd)pyrene (mg/kg)	Site	2/3 (66.7%)	0.55	0.22 - 0.65	N/A	--	--	--	--	Maximum Detect	0.15	2
				Background	1/10 (10.0%)	0.38 - 0.58	0.15								
			Naphthalene (mg/kg)	Site	0/3 (0.0%)	0.55 - 1.1	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.38 - 0.58	--								
			Phenanthrene (mg/kg)	Site	2/3 (66.7%)	0.55	0.24 - 1.6	N/A	--	--	--	--	--	--	2
				Background	0/10 (0.0%)	0.38 - 0.58	--								
			Pyrene (mg/kg)	Site	3/3 (100%)	--	0.13 - 1.5	N/A	--	--	--	--	Maximum Detect	0.25	2
				Background	1/10 (10.0%)	0.38 - 0.58	0.25								
			Total PAHs (mg/kg)	Site	3/3 (100%)	--	0.36 - 11	N/A	--	--	--	--	Maximum Detect	1.6	2
				Background	1/10 (10.0%)	0.38 - 0.58	1.6								
	Depth-weighted Soil (0-2 ft)	Metals	Aluminum (mg/kg)	Site	11/11 (100%)	--	6,200 - 15,000	WMW Test (w/out NDs)	31	32	< 0.05	No	Normal 95% UPL(t)	19,000	0
				Background	10/10 (100%)	--	8,800 - 17,000								
			Antimony (mg/kg)	Site	5/10 (50.0%)	9.2 - 16	0.83 - 670	N/A	--	--	--	--	--	--	5
				Background	0/10 (0.0%)	6.8 - 10	--								
			Arsenic (mg/kg)	Site	11/11 (100%)	--	10 - 190	WMW Test (w/out NDs)	100	32	0.999	Yes	Normal 95% UPL(t)	14	7
				Background	10/10 (100%)	--	4.2 - 14								
			Arsenic (mg/kg)	Site	11/11 (100%)	--	10 - 190	WMW Test (w/out NDs)					Normal 95% UPL(t)	13	7
			No Outliers	Background	9/9 (100%)	--	4.2 - 14								
			Barium (mg/kg)	Site	11/11 (100%)	--	440 - 5,200	WMW Test (w/out NDs)	110	32	1	Yes	Normal 95% UPL(t)	220	11
				Background	10/10 (100%)	--	81 - 200								
			Beryllium (mg/kg)	Site	11/11 (100%)	--	0.46 - 0.95	WMW Test (w/out NDs)	58	32	0.597	Yes	Normal 95% UPL(t)	0.92	1
				Background	10/10 (100%)	--	0.49 - 0.87								
			Cadmium (mg/kg)	Site	11/11 (100%)	--	7.6 - 1,600	WMW Test (w/out NDs)	110	32	1	Yes	HW Gamma 95% UPL	6.0	11
				Background	10/10 (100%)	--	0.56 - 5.4								

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								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Utility Maintenance Worker (1B)	Depth-weighted Soil (0-2 ft)	Metals	Calcium (mg/kg)	Site	11/11 (100%)	--	8,600 - 150,000	WMW Test (w/out NDs)	83	32	0.978	Yes	Normal 95% UPL(t)	36,000	3
				Background	10/10 (100%)	--	1,900 - 32,000								
			Chromium (mg/kg)	Site	10/11 (90.9%)	17	14 - 49	Gehan Test	-0.247	-1.645	0.403	Yes	Normal 95% UPL(t)	58	0
				Background	10/10 (100%)	--	13 - 60								
			Cobalt (mg/kg)	Site	11/11 (100%)	--	6.8 - 31	WMW Test (w/out NDs)	64	32	0.748	Yes	HW Gamma 95% UPL	12	4
				Background	10/10 (100%)	--	8.1 - 13								
			Copper (mg/kg)	Site	11/11 (100%)	--	38 - 2,800	WMW Test (w/out NDs)	102	32	1	Yes	Normal 95% UPL(t)	63	7
				Background	10/10 (100%)	--	13 - 60								
			Cyanide (mg/kg)	Site	2/3 (66.7%)	4.0	7.2 - 25	N/A	--	--	--	--	Maximum Detect	3.1	2
				Background	1/10 (10.0%)	2.9 - 4.2	3.1								
			Iron (mg/kg)	Site	11/11 (100%)	--	23,000 - 56,000	WMW Test (w/out NDs)	92	32	0.996	Yes	Normal 95% UPL(t)	32,000	8
				Background	10/10 (100%)	--	15,000 - 29,000								
			Lead (mg/kg)	Site	11/11 (100%)	--	59 - 8,900	WMW Test (w/out NDs)	109	32	1	Yes	Normal 95% UPL(t)	61	10
				Background	10/10 (100%)	--	10 - 62								
			Magnesium (mg/kg)	Site	11/11 (100%)	--	4,300 - 15,000	WMW Test (w/out NDs)	51	32	0.403	Yes	Normal 95% UPL(t)	14,000	1
				Background	10/10 (100%)	--	2,300 - 12,000								
			Manganese (mg/kg)	Site	11/11 (100%)	--	300 - 1,400	WMW Test (w/out NDs)	51	32	0.403	Yes	Normal 95% UPL(t)	970	2
				Background	10/10 (100%)	--	450 - 930								
			Mercury (mg/kg)	Site	11/11 (100%)	--	0.16 - 14	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	0.34	9
				Background	6/10 (60.0%)	0.12 - 0.17	0.095 - 0.33								
			Nickel (mg/kg)	Site	11/11 (100%)	--	16 - 27	WMW Test (w/out NDs)	23	32	< 0.05	No	Normal 95% UPL(t)	39	0
				Background	10/10 (100%)	--	16 - 39								
			Potassium (mg/kg)	Site	11/11 (100%)	--	790 - 1,900	WMW Test (w/out NDs)	29	32	< 0.05	No	Normal 95% UPL(t)	2,600	0
				Background	10/10 (100%)	--	1,100 - 2,400								
			Selenium (mg/kg)	Site	11/11 (100%)	--	1.8 - 36	N/A	--	--	--	--	--	--	11
				Background	0/10 (0.0%)	4.0 - 5.7	--								
			Silver (mg/kg)	Site	11/11 (100%)	--	0.50 - 49	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	1.6	7
				Background	7/10 (70.0%)	1.1 - 1.4	0.13 - 1.4								
			Sodium (mg/kg)	Site	6/11 (54.5%)	830 - 6,000	380 - 9,400	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	710	2
				Background	8/10 (80.0%)	560 - 600	200 - 650								
			Thallium (mg/kg)	Site	5/11 (45.5%)	3.9 - 8.1	1.4 - 2.5	N/A	--	--	--	--	Nonparametric 95% UPL	3.0	0
				Background	9/10 (90.0%)	2.9	0.62 - 3.0								
			Vanadium (mg/kg)	Site	11/11 (100%)	--	22 - 35	WMW Test (w/out NDs)	73	32	0.904	Yes	Normal 95% UPL(t)	39	0
				Background	10/10 (100%)	--	22 - 40								
			Zinc (mg/kg)	Site	11/11 (100%)	--	840 - 150,000	WMW Test (w/out NDs)	110	32	1	Yes	Normal 95% UPL(t)	280	11
				Background	10/10 (100%)	--	46 - 290								
		Miscellaneous-SPLP	Fluoride (mg/L)	Site	3/3 (100%)	--	0.36 - 2.9	N/A	--	--	--	--	Normal 95% UPL(t)	0.87	1
				Background	10/10 (100%)	--	0.24 - 0.85								
		PCBs	Aroclor 1016 (mg/kg)	Site	0/3 (0.0%)	0.039 - 0.11	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.039 - 0.055	--								
			Aroclor 1221 (mg/kg)	Site	0/3 (0.0%)	0.078 - 0.22	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.079 - 0.11	--								
			Aroclor 1232 (mg/kg)	Site	0/3 (0.0%)	0.039 - 0.11	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.039 - 0.055	--								
			Aroclor 1242 (mg/kg)	Site	0/3 (0.0%)	0.039 - 0.11	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.039 - 0.055	--								
			Aroclor 1248 (mg/kg)	Site	0/3 (0.0%)	0.039 - 0.11	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.039 - 0.055	--								
			Aroclor 1254 (mg/kg)	Site	2/3 (66.7%)	0.052	0.053 - 0.072	N/A	--	--	--	--	Maximum Detect	0.064	1
				Background	3/10 (30.0%)	0.039 - 0.055	0.029 - 0.064								
			Aroclor 1260 (mg/kg)	Site	0/3 (0.0%)	0.039 - 0.11	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.039 - 0.055	--								
			Total PCBs (mg/kg)	Site	2/3 (66.7%)	0.10	0.067 - 0.072	N/A	--	--	--	--	Maximum Detect	0.064	2
				Background	3/10 (30.0%)	0.079 - 0.11	0.029 - 0.064								
		Pesticides/Herbicides	4,4'-DDD (ug/kg)	Site	2/3 (66.7%)	11	4.2 - 5.7	N/A	--	--	--	--	Maximum Detect	4.1	2
				Background	3/10 (30.0%)	3.9 - 5.5	2.1 - 4.1								
			4,4'-DDE (ug/kg)	Site	1/3 (33.3%)	3.9 - 11	4.4	N/A	--	--	--	--	Maximum Detect	4.3	1
				Background	4/10 (40.0%)	3.9 - 5.5	1.1 - 4.3								
			4,4'-DDT (ug/kg)	Site	3/3 (100%)	--	4.5 - 9.4	N/A	--	--	--	--	--	--	3
				Background	0/10 (0.0%)	3.9 - 5.5	--								
			Aldrin (ug/kg)	Site	0/3 (0.0%)	2.0 - 5.6	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 2.9	--								
			Alpha-BHC (ug/kg)	Site	0/3 (0.0%)	2.0 - 5.6	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 2.9	--								

Table A-1
Hypothesis Testing and Background Screening Levels - Soil
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								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Utility Maintenance Worker (1B)	Depth-weighted Soil (0-2 ft)	Pesticides/Herbicides	Alpha-Chlordane (ug/kg)	Site	1/3 (33.3%)	2.0 - 5.6	2.2	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	2.7	0
				Background	5/10 (50.0%)	2.0 - 2.7	0.73 - 3.1								
			Beta-BHC (ug/kg)	Site	0/3 (0.0%)	2.0 - 5.6	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 2.9	--								
			delta-BHC (ug/kg)	Site	0/3 (0.0%)	2.0 - 5.6	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 2.9	--								
			Dieldrin (ug/kg)	Site	2/3 (66.7%)	5.2	4.6 - 4.7	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	5.3	0
				Background	7/10 (70.0%)	3.9 - 5.5	2.7 - 5.1								
			Endosulfan I (ug/kg)	Site	0/3 (0.0%)	2.0 - 5.6	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 2.9	--								
			Endosulfan II (ug/kg)	Site	0/3 (0.0%)	3.9 - 11	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	3.9 - 5.5	--								
			Endosulfan sulfate (ug/kg)	Site	0/3 (0.0%)	3.9 - 11	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	3.9 - 5.5	--								
			Endrin (ug/kg)	Site	1/3 (33.3%)	5.2 - 11	4.8	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	3.9 - 5.5	--								
			Endrin aldehyde (ug/kg)	Site	0/3 (0.0%)	3.9 - 11	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	3.9 - 5.5	--								
			Endrin ketone (ug/kg)	Site	1/3 (33.3%)	5.2 - 11	5.9	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	3.9 - 5.5	--								
			gamma-BHC (Lindane) (ug/kg)	Site	0/3 (0.0%)	2.0 - 5.6	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 2.9	--								
			gamma-Chlordane (ug/kg)	Site	0/3 (0.0%)	2.0 - 5.6	--	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	2.8	0
				Background	5/10 (50.0%)	2.0 - 2.7	0.74 - 2.9								
			Heptachlor (ug/kg)	Site	0/3 (0.0%)	2.0 - 5.6	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 2.9	--								
			Heptachlor epoxide (ug/kg)	Site	0/3 (0.0%)	2.0 - 5.6	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 2.9	--								
			Methoxychlor (ug/kg)	Site	1/3 (33.3%)	27 - 56	22	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	20 - 29	--								
			Toxaphene (ug/kg)	Site	0/3 (0.0%)	200 - 560	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	200 - 290	--								
		SVOCs	Acenaphthene (mg/kg)	Site	0/3 (0.0%)	0.52 - 1.1	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.39 - 0.55	--								
			Acenaphthylene (mg/kg)	Site	0/3 (0.0%)	0.52 - 1.1	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.39 - 0.55	--								
			Anthracene (mg/kg)	Site	1/3 (33.3%)	0.52 - 1.1	0.40	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	0.39 - 0.55	--								
			Benzo(a)anthracene (mg/kg)	Site	2/3 (66.7%)	0.52	0.48 - 0.96	N/A	--	--	--	--	Maximum Detect	0.41	2
				Background	3/10 (30.0%)	0.39 - 0.55	0.21 - 0.41								
			Benzo(a)pyrene (mg/kg)	Site	2/3 (66.7%)	0.52	0.40 - 0.97	N/A	--	--	--	--	Maximum Detect	0.41	1
				Background	3/10 (30.0%)	0.39 - 0.55	0.20 - 0.41								
			Benzo(b)fluoranthene (mg/kg)	Site	2/3 (66.7%)	0.52	0.56 - 0.99	N/A	--	--	--	--	Maximum Detect	0.25	2
				Background	3/10 (30.0%)	0.39 - 0.55	0.15 - 0.25								
			Benzo(g,h,i)perylene (mg/kg)	Site	2/3 (66.7%)	0.52	0.59 - 0.94	N/A	--	--	--	--	Maximum Detect	0.23	2
				Background	1/10 (10.0%)	0.39 - 0.55	0.23								
			Benzo(k)fluoranthene (mg/kg)	Site	2/3 (66.7%)	0.52	0.40 - 0.96	N/A	--	--	--	--	Maximum Detect	0.23	2
				Background	3/10 (30.0%)	0.39 - 0.55	0.13 - 0.23								
			Chrysene (mg/kg)	Site	3/3 (100%)	--	0.41 - 0.98	N/A	--	--	--	--	Maximum Detect	0.26	3
				Background	3/10 (30.0%)	0.39 - 0.55	0.16 - 0.26								
			Dibenz(a,h)anthracene (mg/kg)	Site	1/3 (33.3%)	0.52 - 1.1	0.58	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	0.39 - 0.55	--								
			Fluoranthene (mg/kg)	Site	3/3 (100%)	--	0.11 - 1.1	N/A	--	--	--	--	Maximum Detect	0.23	2
				Background	3/10 (30.0%)	0.39 - 0.55	0.13 - 0.23								
			Fluorene (mg/kg)	Site	1/3 (33.3%)	0.52 - 1.1	0.39	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	0.39 - 0.55	--								
			Indeno(1,2,3-cd)pyrene (mg/kg)	Site	2/3 (66.7%)	0.52	0.66 - 0.96	N/A	--	--	--	--	Maximum Detect	0.41	2
				Background	3/10 (30.0%)	0.39 - 0.55	0.20 - 0.41								
			Naphthalene (mg/kg)	Site	1/3 (33.3%)	0.52 - 1.1	0.53	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	0.39 - 0.55	--								
			Phenanthrene (mg/kg)	Site	2/3 (66.7%)	0.52	0.96 - 1.2	N/A	--	--	--	--	--	--	2
				Background	0/10 (0.0%)	0.39 - 0.55	--								
			Pyrene (mg/kg)	Site	3/3 (100%)	--	0.12 - 1.0	N/A	--	--	--	--	Maximum Detect	0.27	2
				Background	3/10 (30.0%)	0.39 - 0.55	0.17 - 0.27								
			Total PAHs (mg/kg)	Site	3/3 (100%)	--	0.26 - 6.6	N/A	--	--	--	--	Maximum Detect	1.2	1
				Background	3/10 (30.0%)	0.39 - 0.55	0.87 - 1.2								

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DePue Lake, DePue, Illinois

								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Wildlife Workers & Hunters (2)	Surface Soil	Metals	Aluminum (mg/kg)	Site	24/24 (100%)	--	5,000 - 20,000	WMW Test (w/out NDs)	1.947	-1.645	0.974	Yes	Normal 95% UPL(t)	19,000	4
				Background	10/10 (100%)	--	7,500 - 19,000								
			Antimony (mg/kg)	Site	0/24 (0.0%)	6.9 - 14	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	6.5 - 10	--								
			Arsenic (mg/kg)	Site	24/24 (100%)	--	4.2 - 28	WMW Test (w/out NDs)	0.491	-1.645	0.688	Yes	HW Gamma 95% UPL	18	1
				Background	10/10 (100%)	--	4.1 - 22								
			Arsenic (mg/kg)	Site	24/24 (100%)	--	4.2 - 28	WMW Test (w/out NDs)					Normal 95% UPL(t)	11	2
			No Outliers	Background	9/9 (100%)	--	4.1 - 10								
			Barium (mg/kg)	Site	24/24 (100%)	--	140 - 1,200	WMW Test (w/out NDs)	3.137	-1.645	0.999	Yes	Normal 95% UPL(t)	210	9
				Background	10/10 (100%)	--	75 - 190								
			Beryllium (mg/kg)	Site	24/24 (100%)	--	0.29 - 1.0	WMW Test (w/out NDs)	2.306	-1.645	0.989	Yes	Normal 95% UPL(t)	0.96	5
				Background	10/10 (100%)	--	0.45 - 0.96								
			Cadmium (mg/kg)	Site	24/24 (100%)	--	1.5 - 26	WMW Test (w/out NDs)	3.269	-1.645	0.999	Yes	Normal 95% UPL(t)	3.3	12
				Background	10/10 (100%)	--	0.52 - 3.1								
			Calcium (mg/kg)	Site	24/24 (100%)	--	12,000 - 45,000	WMW Test (w/out NDs)	1.417	-1.645	0.922	Yes	Normal 95% UPL(t)	40,000	1
				Background	10/10 (100%)	--	1,900 - 34,000								
			Chromium (mg/kg)	Site	24/24 (100%)	--	10 - 60	WMW Test (w/out NDs)	3.496	-1.645	1	Yes	Normal 95% UPL(t)	40	16
				Background	10/10 (100%)	--	11 - 35								
			Cobalt (mg/kg)	Site	24/24 (100%)	--	5.1 - 12	WMW Test (w/out NDs)	1.021	-1.645	0.846	Yes	Normal 95% UPL(t)	12	2
				Background	10/10 (100%)	--	7.2 - 11								
			Copper (mg/kg)	Site	24/24 (100%)	--	17 - 99	WMW Test (w/out NDs)	3.799	-1.645	1	Yes	Normal 95% UPL(t)	52	9
				Background	10/10 (100%)	--	12 - 46								
			Cyanide (mg/kg)	Site	0/3 (0.0%)	3.0 - 4.2	--	N/A	--	--	--	--	Maximum Detect	0.87	0
				Background	1/10 (10.0%)	2.9 - 4.4	0.87								
			Iron (mg/kg)	Site	24/24 (100%)	--	9,900 - 36,000	WMW Test (w/out NDs)	1.191	-1.645	0.883	Yes	Normal 95% UPL(t)	32,000	1
				Background	10/10 (100%)	--	15,000 - 29,000								
			Lead (mg/kg)	Site	24/24 (100%)	--	36 - 190	WMW Test (w/out NDs)	4.403	-1.645	1	Yes	Normal 95% UPL(t)	44	15
				Background	10/10 (100%)	--	11 - 38								
			Magnesium (mg/kg)	Site	24/24 (100%)	--	5,800 - 15,000	WMW Test (w/out NDs)	1.569	-1.645	0.942	Yes	Normal 95% UPL(t)	15,000	0
				Background	10/10 (100%)	--	1,900 - 13,000								
			Manganese (mg/kg)	Site	24/24 (100%)	--	410 - 1,000	WMW Test (w/out NDs)	0.661	-1.645	0.746	Yes	Normal 95% UPL(t)	930	1
				Background	10/10 (100%)	--	370 - 850								
			Mercury (mg/kg)	Site	22/24 (91.7%)	0.11 - 0.15	0.058 - 0.48	N/A	--	--	--	--	Nonparametric 95% UPL	0.22	4
				Background	5/10 (50.0%)	0.11 - 0.18	0.069 - 0.22								
			Nickel (mg/kg)	Site	24/24 (100%)	--	11 - 43	WMW Test (w/out NDs)	2.967	-1.645	0.998	Yes	Nonparametric 95% UPL	33	7
				Background	10/10 (100%)	--	14 - 33								
			Potassium (mg/kg)	Site	24/24 (100%)	--	740 - 2,800	WMW Test (w/out NDs)	1.758	-1.645	0.961	Yes	Normal 95% UPL(t)	2,800	0
				Background	10/10 (100%)	--	940 - 2,400								
			Selenium (mg/kg)	Site	24/24 (100%)	--	0.71 - 3.0	N/A	--	--	--	--	--	--	24
				Background	0/10 (0.0%)	3.8 - 5.9	--								
			Silver (mg/kg)	Site	24/24 (100%)	--	0.18 - 1.6	N/A	--	--	--	--	Nonparametric 95% UPL	1.7	0
				Background	6/10 (60.0%)	1.1 - 1.7	0.13 - 0.81								
			Sodium (mg/kg)	Site	9/24 (37.5%)	580 - 800	210 - 700	N/A	--	--	--	--	Nonparametric 95% UPL	710	0
				Background	6/10 (60.0%)	540 - 710	200 - 230								
			Thallium (mg/kg)	Site	0/24 (0.0%)	2.9 - 5.7	--	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	1.2	0
				Background	9/10 (90.0%)	2.7	0.61 - 1.1								
			Vanadium (mg/kg)	Site	24/24 (100%)	--	15 - 38	WMW Test (w/out NDs)	1.814	-1.645	0.965	Yes	Normal 95% UPL(t)	40	0
				Background	10/10 (100%)	--	21 - 42								
			Zinc (mg/kg)	Site	24/24 (100%)	--	190 - 2,500	WMW Test (w/out NDs)	4.441	-1.645	1	Yes	Normal 95% UPL(t)	220	20
				Background	10/10 (100%)	--	42 - 200								
		Miscellaneous-SPLP	Fluoride (mg/L)	Site	3/3 (100%)	--	0.23 - 0.38	N/A	--	--	--	--	Normal 95% UPL(t)	0.71	0
				Background	10/10 (100%)	--	0.40 - 0.71								
		PCBs	Aroclor 1016 (mg/kg)	Site	0/3 (0.0%)	0.039 - 0.055	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.038 - 0.058	--								
			Aroclor 1221 (mg/kg)	Site	0/3 (0.0%)	0.080 - 0.11	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.078 - 0.12	--								
			Aroclor 1232 (mg/kg)	Site	0/3 (0.0%)	0.039 - 0.055	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.038 - 0.058	--								
			Aroclor 1242 (mg/kg)	Site	0/3 (0.0%)	0.039 - 0.055	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.038 - 0.058	--								
			Aroclor 1248 (mg/kg)	Site	0/3 (0.0%)	0.039 - 0.055	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.038 - 0.058	--								

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								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Wildlife Workers & Hunters (2)	Surface Soil	PCBs	Aroclor 1254 (mg/kg)	Site	0/3 (0.0%)	0.039 - 0.055	--	N/A	--	--	--	--	Maximum Detect	0.044	0
				Background	3/10 (30.0%)	0.038 - 0.058	0.018 - 0.044								
			Aroclor 1260 (mg/kg)	Site	0/3 (0.0%)	0.039 - 0.055	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.038 - 0.058	--								
			Total PCBs (mg/kg)	Site	0/3 (0.0%)	0.080 - 0.11	--	N/A	--	--	--	--	Maximum Detect	0.044	0
				Background	3/10 (30.0%)	0.078 - 0.12	0.018 - 0.044								
		Pesticides/Herbicides	4,4'-DDD (ug/kg)	Site	1/3 (33.3%)	3.9 - 5.3	1.3	N/A	--	--	--	--	Maximum Detect	1.5	0
				Background	1/10 (10.0%)	3.8 - 5.8	1.5								
			4,4'-DDE (ug/kg)	Site	3/3 (100%)	--	1.1 - 2.1	N/A	--	--	--	--	Maximum Detect	2.3	0
				Background	4/10 (40.0%)	3.8 - 5.8	1.1 - 2.3								
			4,4'-DDT (ug/kg)	Site	1/3 (33.3%)	3.9 - 5.3	2.5	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	3.8 - 5.8	--								
			Aldrin (ug/kg)	Site	0/3 (0.0%)	2.0 - 2.8	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 3.0	--								
			Alpha-BHC (ug/kg)	Site	0/3 (0.0%)	2.0 - 2.8	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 3.0	--								
			Alpha-Chlordane (ug/kg)	Site	1/3 (33.3%)	2.0 - 2.7	1.1	N/A	--	--	--	--	Maximum Detect	3.9	0
				Background	3/10 (30.0%)	2.0 - 2.9	0.68 - 3.9								
			Beta-BHC (ug/kg)	Site	0/3 (0.0%)	2.0 - 2.8	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 3.0	--								
			delta-BHC (ug/kg)	Site	0/3 (0.0%)	2.0 - 2.8	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 3.0	--								
			Dieldrin (ug/kg)	Site	2/3 (66.7%)	5.5	0.84 - 1.3	N/A	--	--	--	--	Nonparametric 95% UPL	5.8	0
				Background	7/10 (70.0%)	3.8 - 5.8	1.3 - 4.6								
			Endosulfan I (ug/kg)	Site	0/3 (0.0%)	2.0 - 2.8	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 3.0	--								
			Endosulfan II (ug/kg)	Site	0/3 (0.0%)	3.9 - 5.5	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	3.8 - 5.8	--								
			Endosulfan sulfate (ug/kg)	Site	0/3 (0.0%)	3.9 - 5.5	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	3.8 - 5.8	--								
			Endrin (ug/kg)	Site	0/3 (0.0%)	3.9 - 5.5	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	3.8 - 5.8	--								
			Endrin aldehyde (ug/kg)	Site	1/3 (33.3%)	3.9 - 5.5	1.4	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	3.8 - 5.8	--								
			Endrin ketone (ug/kg)	Site	0/3 (0.0%)	3.9 - 5.5	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	3.8 - 5.8	--								
			gamma-BHC (Lindane) (ug/kg)	Site	0/3 (0.0%)	2.0 - 2.8	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 3.0	--								
			gamma-Chlordane (ug/kg)	Site	0/3 (0.0%)	2.0 - 2.8	--	N/A	--	--	--	--	Nonparametric 95% UPL	2.9	0
				Background	5/10 (50.0%)	2.0 - 2.9	0.75 - 1.5								
			Heptachlor (ug/kg)	Site	0/3 (0.0%)	2.0 - 2.8	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 3.0	--								
			Heptachlor epoxide (ug/kg)	Site	0/3 (0.0%)	2.0 - 2.8	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 3.0	--								
			Methoxychlor (ug/kg)	Site	0/3 (0.0%)	20 - 28	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	20 - 30	--								
			Toxaphene (ug/kg)	Site	0/3 (0.0%)	200 - 280	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	200 - 300	--								
		SVOCs	Acenaphthene (mg/kg)	Site	0/3 (0.0%)	0.39 - 0.55	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.38 - 0.58	--								
			Acenaphthylene (mg/kg)	Site	0/3 (0.0%)	0.39 - 0.55	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.38 - 0.58	--								
			Anthracene (mg/kg)	Site	0/3 (0.0%)	0.39 - 0.55	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.38 - 0.58	--								
			Benzo(a)anthracene (mg/kg)	Site	1/3 (33.3%)	0.39 - 0.55	0.12	N/A	--	--	--	--	Maximum Detect	0.17	0
				Background	1/10 (10.0%)	0.38 - 0.58	0.17								
			Benzo(a)pyrene (mg/kg)	Site	1/3 (33.3%)	0.39 - 0.55	0.17	N/A	--	--	--	--	Maximum Detect	0.17	0
				Background	1/10 (10.0%)	0.38 - 0.58	0.17								
			Benzo(b)fluoranthene (mg/kg)	Site	1/3 (33.3%)	0.39 - 0.55	0.17	N/A	--	--	--	--	Maximum Detect	0.25	0
				Background	1/10 (10.0%)	0.38 - 0.58	0.25								
			Benzo(g,h,i)perylene (mg/kg)	Site	1/3 (33.3%)	0.39 - 0.55	0.12	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	0.38 - 0.58	--								
			Benzo(k)fluoranthene (mg/kg)	Site	1/3 (33.3%)	0.39 - 0.55	0.16	N/A	--	--	--	--	Maximum Detect	0.20	0
				Background	1/10 (10.0%)	0.38 - 0.58	0.20								

Table A-1
Hypothesis Testing and Background Screening Levels - Soil
OU5 Baseline Human Health Risk Assessment
DePue Lake, DePue, Illinois

								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Wildlife Workers & Hunters (2)	Surface Soil	SVOCs	Chrysene (mg/kg)	Site	2/3 (66.7%)	0.39	0.11 - 0.17	N/A	--	--	--	--	Maximum Detect	0.25	0
				Background	1/10 (10.0%)	0.38 - 0.58	0.25								
			Dibenz(a,h)anthracene (mg/kg)	Site	0/3 (0.0%)	0.39 - 0.55	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.38 - 0.58	--								
			Fluoranthene (mg/kg)	Site	2/3 (66.7%)	0.39	0.12 - 0.23	N/A	--	--	--	--	Maximum Detect	0.20	1
				Background	1/10 (10.0%)	0.38 - 0.58	0.20								
			Fluorene (mg/kg)	Site	0/3 (0.0%)	0.39 - 0.55	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.38 - 0.58	--								
			Indeno(1,2,3-cd)pyrene (mg/kg)	Site	1/3 (33.3%)	0.39 - 0.55	0.15	N/A	--	--	--	--	Maximum Detect	0.15	0
				Background	1/10 (10.0%)	0.38 - 0.58	0.15								
			Naphthalene (mg/kg)	Site	0/3 (0.0%)	0.39 - 0.55	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.38 - 0.58	--								
			Phenanthrene (mg/kg)	Site	0/3 (0.0%)	0.39 - 0.55	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.38 - 0.58	--								
			Pyrene (mg/kg)	Site	2/3 (66.7%)	0.39	0.13 - 0.20	N/A	--	--	--	--	Maximum Detect	0.25	0
				Background	1/10 (10.0%)	0.38 - 0.58	0.25								
			Total PAHs (mg/kg)	Site	2/3 (66.7%)	0.39	0.36 - 1.5	N/A	--	--	--	--	Maximum Detect	1.6	0
				Background	1/10 (10.0%)	0.38 - 0.58	1.6								
	Depth-weighted Soil (0-2 ft)	Metals	Aluminum (mg/kg)	Site	24/24 (100%)	--	4,900 - 20,000	WMW Test (w/out NDs)	1.455	-1.645	0.927	Yes	Normal 95% UPL(t)	19,000	4
				Background	10/10 (100%)	--	8,800 - 17,000								
			Antimony (mg/kg)	Site	0/24 (0.0%)	7.1 - 10	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	6.8 - 10	--								
			Arsenic (mg/kg)	Site	24/24 (100%)	--	4.9 - 24	WMW Test (w/out NDs)	1.455	-1.645	0.927	Yes	Normal 95% UPL(t)	14	3
				Background	10/10 (100%)	--	4.2 - 14								
			Arsenic (mg/kg)	Site	24/24 (100%)	--	4.9 - 24	WMW Test (w/out NDs)					Normal 95% UPL(t)	13	4
			No Outliers	Background	9/9 (100%)	--	4.2 - 14								
			Barium (mg/kg)	Site	24/24 (100%)	--	150 - 1,500	WMW Test (w/out NDs)	3.534	-1.645	1	Yes	Normal 95% UPL(t)	220	14
				Background	10/10 (100%)	--	81 - 200								
			Beryllium (mg/kg)	Site	24/24 (100%)	--	0.31 - 1.1	WMW Test (w/out NDs)	2.041	-1.645	0.979	Yes	Normal 95% UPL(t)	0.92	5
				Background	10/10 (100%)	--	0.49 - 0.87								
			Cadmium (mg/kg)	Site	24/24 (100%)	--	2.4 - 27	WMW Test (w/out NDs)	3.685	-1.645	1	Yes	HW Gamma 95% UPL	6.0	13
				Background	10/10 (100%)	--	0.56 - 5.4								
			Calcium (mg/kg)	Site	24/24 (100%)	--	8,600 - 43,000	WMW Test (w/out NDs)	1.002	-1.645	0.842	Yes	Normal 95% UPL(t)	36,000	1
				Background	10/10 (100%)	--	1,900 - 32,000								
			Chromium (mg/kg)	Site	24/24 (100%)	--	9.2 - 69	WMW Test (w/out NDs)	2.476	-1.645	0.993	Yes	Normal 95% UPL(t)	58	9
				Background	10/10 (100%)	--	13 - 60								
			Cobalt (mg/kg)	Site	24/24 (100%)	--	5.3 - 13	WMW Test (w/out NDs)	0.302	-1.645	0.619	Yes	HW Gamma 95% UPL	12	2
				Background	10/10 (100%)	--	8.1 - 13								
			Copper (mg/kg)	Site	24/24 (100%)	--	23 - 78	WMW Test (w/out NDs)	3.194	-1.645	0.999	Yes	Normal 95% UPL(t)	63	8
				Background	10/10 (100%)	--	13 - 60								
			Cyanide (mg/kg)	Site	0/3 (0.0%)	3.1 - 4.0	--	N/A	--	--	--	--	Maximum Detect	3.1	0
				Background	1/10 (10.0%)	2.9 - 4.2	3.1								
			Iron (mg/kg)	Site	24/24 (100%)	--	10,000 - 41,000	WMW Test (w/out NDs)	1.398	-1.645	0.919	Yes	Normal 95% UPL(t)	32,000	1
				Background	10/10 (100%)	--	15,000 - 29,000								
			Lead (mg/kg)	Site	24/24 (100%)	--	32 - 150	WMW Test (w/out NDs)	3.912	-1.645	1	Yes	Normal 95% UPL(t)	61	14
				Background	10/10 (100%)	--	10 - 62								
			Magnesium (mg/kg)	Site	24/24 (100%)	--	4,500 - 14,000	WMW Test (w/out NDs)	1.512	-1.645	0.935	Yes	Normal 95% UPL(t)	14,000	2
				Background	10/10 (100%)	--	2,300 - 12,000								
			Manganese (mg/kg)	Site	24/24 (100%)	--	320 - 1,800	WMW Test (w/out NDs)	-0.548	-1.645	0.292	Yes	Normal 95% UPL(t)	970	3
				Background	10/10 (100%)	--	450 - 930								
			Mercury (mg/kg)	Site	22/24 (91.7%)	0.12 - 0.14	0.072 - 0.62	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	0.34	7
				Background	6/10 (60.0%)	0.12 - 0.17	0.095 - 0.33								
			Nickel (mg/kg)	Site	24/24 (100%)	--	11 - 48	WMW Test (w/out NDs)	1.72	-1.645	0.957	Yes	Normal 95% UPL(t)	39	8
				Background	10/10 (100%)	--	16 - 39								
			Potassium (mg/kg)	Site	24/24 (100%)	--	630 - 2,600	WMW Test (w/out NDs)	1.077	-1.645	0.859	Yes	Normal 95% UPL(t)	2,600	0
				Background	10/10 (100%)	--	1,100 - 2,400								
			Selenium (mg/kg)	Site	24/24 (100%)	--	0.55 - 2.9	N/A	--	--	--	--	--	--	24
				Background	0/10 (0.0%)	4.0 - 5.7	--								
			Silver (mg/kg)	Site	24/24 (100%)	--	0.29 - 1.7	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	1.6	1
				Background	7/10 (70.0%)	1.1 - 1.4	0.13 - 1.4								
			Sodium (mg/kg)	Site	12/24 (50.0%)	590 - 760	230 - 700	Gehan Test	0.484	-1.645	0.686	Yes	95% Kaplan-Meier UPL(t)	710	0
				Background	8/10 (80.0%)	560 - 600	200 - 650								
			Thallium (mg/kg)	Site	0/24 (0.0%)	3.0 - 4.4	--	N/A	--	--	--	--	Nonparametric 95% UPL	3.0	0
				Background	9/10 (90.0%)	2.9	0.62 - 3.0								

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OU5 Baseline Human Health Risk Assessment
DePue Lake, DePue, Illinois

								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Wildlife Workers & Hunters (2)	Depth-weighted Soil (0-2 ft)	Metals	Vanadium (mg/kg)	Site	24/24 (100%)	--	15 - 38	WMW Test (w/out NDs)	1.436	-1.645	0.925	Yes	Normal 95% UPL(t)	39	0
				Background	10/10 (100%)	--	22 - 40								
			Zinc (mg/kg)	Site	24/24 (100%)	--	220 - 1,700	WMW Test (w/out NDs)	4.328	-1.645	1	Yes	Normal 95% UPL(t)	280	19
				Background	10/10 (100%)	--	46 - 290								
		Miscellaneous-SPLP	Fluoride (mg/L)	Site	3/3 (100%)	--	0.36 - 0.53	N/A	--	--	--	--	Normal 95% UPL(t)	0.87	0
				Background	10/10 (100%)	--	0.24 - 0.85								
		PCBs	Aroclor 1016 (mg/kg)	Site	0/3 (0.0%)	0.040 - 0.052	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.039 - 0.055	--								
			Aroclor 1221 (mg/kg)	Site	0/3 (0.0%)	0.082 - 0.10	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.079 - 0.11	--								
			Aroclor 1232 (mg/kg)	Site	0/3 (0.0%)	0.040 - 0.052	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.039 - 0.055	--								
			Aroclor 1242 (mg/kg)	Site	0/3 (0.0%)	0.040 - 0.052	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.039 - 0.055	--								
			Aroclor 1248 (mg/kg)	Site	0/3 (0.0%)	0.040 - 0.052	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.039 - 0.055	--								
			Aroclor 1254 (mg/kg)	Site	0/3 (0.0%)	0.040 - 0.052	--	N/A	--	--	--	--	Maximum Detect	0.064	0
				Background	3/10 (30.0%)	0.039 - 0.055	0.029 - 0.064								
			Aroclor 1260 (mg/kg)	Site	0/3 (0.0%)	0.040 - 0.052	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.039 - 0.055	--								
			Total PCBs (mg/kg)	Site	0/3 (0.0%)	0.082 - 0.10	--	N/A	--	--	--	--	Maximum Detect	0.064	0
				Background	3/10 (30.0%)	0.079 - 0.11	0.029 - 0.064								
		Pesticides/Herbicides	4,4'-DDD (ug/kg)	Site	2/3 (66.7%)	4.0	2.5 - 4.2	N/A	--	--	--	--	Maximum Detect	4.1	1
				Background	3/10 (30.0%)	3.9 - 5.5	2.1 - 4.1								
			4,4'-DDE (ug/kg)	Site	3/3 (100%)	--	1.9 - 4.4	N/A	--	--	--	--	Maximum Detect	4.3	1
				Background	4/10 (40.0%)	3.9 - 5.5	1.1 - 4.3								
			4,4'-DDT (ug/kg)	Site	3/3 (100%)	--	2.0 - 4.5	N/A	--	--	--	--	--	--	3
				Background	0/10 (0.0%)	3.9 - 5.5	--								
			Aldrin (ug/kg)	Site	0/3 (0.0%)	2.1 - 2.7	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 2.9	--								
			Alpha-BHC (ug/kg)	Site	0/3 (0.0%)	2.1 - 2.7	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 2.9	--								
			Alpha-Chlordane (ug/kg)	Site	3/3 (100%)	--	1.0 - 2.2	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	2.7	0
				Background	5/10 (50.0%)	2.0 - 2.7	0.73 - 3.1								
			Beta-BHC (ug/kg)	Site	0/3 (0.0%)	2.1 - 2.7	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 2.9	--								
			delta-BHC (ug/kg)	Site	0/3 (0.0%)	2.1 - 2.7	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 2.9	--								
			Dieldrin (ug/kg)	Site	2/3 (66.7%)	5.2	1.9 - 2.2	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	5.3	0
				Background	7/10 (70.0%)	3.9 - 5.5	2.7 - 5.1								
			Endosulfan I (ug/kg)	Site	0/3 (0.0%)	2.1 - 2.7	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 2.9	--								
			Endosulfan II (ug/kg)	Site	0/3 (0.0%)	4.0 - 5.2	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	3.9 - 5.5	--								
			Endosulfan sulfate (ug/kg)	Site	0/3 (0.0%)	4.0 - 5.2	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	3.9 - 5.5	--								
			Endrin (ug/kg)	Site	0/3 (0.0%)	4.0 - 5.2	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	3.9 - 5.5	--								
			Endrin aldehyde (ug/kg)	Site	1/3 (33.3%)	4.0 - 5.2	4.0	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	3.9 - 5.5	--								
			Endrin ketone (ug/kg)	Site	0/3 (0.0%)	4.0 - 5.2	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	3.9 - 5.5	--								
			gamma-BHC (Lindane) (ug/kg)	Site	0/3 (0.0%)	2.1 - 2.7	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 2.9	--								
			gamma-Chlordane (ug/kg)	Site	1/3 (33.3%)	2.6 - 2.7	1.2	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	2.8	0
				Background	5/10 (50.0%)	2.0 - 2.7	0.74 - 2.9								
			Heptachlor (ug/kg)	Site	0/3 (0.0%)	2.1 - 2.7	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	2.0 - 2.9	--								
			Heptachlor epoxide (ug/kg)	Site	1/3 (33.3%)	2.1 - 2.7	1.3	N/A	--	--	--	--	--	--	1
				Background	0/10 (0.0%)	2.0 - 2.9	--								
			Methoxychlor (ug/kg)	Site	0/3 (0.0%)	21 - 27	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	20 - 29	--								
			Toxaphene (ug/kg)	Site	0/3 (0.0%)	210 - 270	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	200 - 290	--								

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DePue Lake, DePue, Illinois

								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Wildlife Workers & Hunters (2)	Depth-weighted Soil (0-2 ft)	SVOCs	Acenaphthene (mg/kg)	Site	0/3 (0.0%)	0.40 - 0.52	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.39 - 0.55	--								
			Acenaphthylene (mg/kg)	Site	0/3 (0.0%)	0.40 - 0.52	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.39 - 0.55	--								
			Anthracene (mg/kg)	Site	0/3 (0.0%)	0.40 - 0.52	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.39 - 0.55	--								
			Benzo(a)anthracene (mg/kg)	Site	1/3 (33.3%)	0.40 - 0.52	0.14	N/A	--	--	--	--	Maximum Detect	0.41	0
				Background	3/10 (30.0%)	0.39 - 0.55	0.21 - 0.41								
			Benzo(a)pyrene (mg/kg)	Site	1/3 (33.3%)	0.40 - 0.52	0.17	N/A	--	--	--	--	Maximum Detect	0.41	0
				Background	3/10 (30.0%)	0.39 - 0.55	0.20 - 0.41								
			Benzo(b)fluoranthene (mg/kg)	Site	1/3 (33.3%)	0.40 - 0.52	0.17	N/A	--	--	--	--	Maximum Detect	0.25	0
				Background	3/10 (30.0%)	0.39 - 0.55	0.15 - 0.25								
			Benzo(g,h,i)perylene (mg/kg)	Site	1/3 (33.3%)	0.40 - 0.52	0.13	N/A	--	--	--	--	Maximum Detect	0.23	0
				Background	1/10 (10.0%)	0.39 - 0.55	0.23								
			Benzo(k)fluoranthene (mg/kg)	Site	1/3 (33.3%)	0.40 - 0.52	0.16	N/A	--	--	--	--	Maximum Detect	0.23	0
				Background	3/10 (30.0%)	0.39 - 0.55	0.13 - 0.23								
			Chrysene (mg/kg)	Site	2/3 (66.7%)	0.40	0.18 - 0.41	N/A	--	--	--	--	Maximum Detect	0.26	1
				Background	3/10 (30.0%)	0.39 - 0.55	0.16 - 0.26								
			Dibenz(a,h)anthracene (mg/kg)	Site	0/3 (0.0%)	0.40 - 0.52	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.39 - 0.55	--								
			Fluoranthene (mg/kg)	Site	2/3 (66.7%)	0.40	0.11 - 0.22	N/A	--	--	--	--	Maximum Detect	0.23	0
				Background	3/10 (30.0%)	0.39 - 0.55	0.13 - 0.23								
			Fluorene (mg/kg)	Site	0/3 (0.0%)	0.40 - 0.52	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.39 - 0.55	--								
			Indeno(1,2,3-cd)pyrene (mg/kg)	Site	1/3 (33.3%)	0.40 - 0.52	0.15	N/A	--	--	--	--	Maximum Detect	0.41	0
				Background	3/10 (30.0%)	0.39 - 0.55	0.20 - 0.41								
			Naphthalene (mg/kg)	Site	0/3 (0.0%)	0.40 - 0.52	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.39 - 0.55	--								
			Phenanthrene (mg/kg)	Site	0/3 (0.0%)	0.40 - 0.52	--	N/A	--	--	--	--	--	--	0
				Background	0/10 (0.0%)	0.39 - 0.55	--								
			Pyrene (mg/kg)	Site	2/3 (66.7%)	0.40	0.12 - 0.20	N/A	--	--	--	--	Maximum Detect	0.27	0
				Background	3/10 (30.0%)	0.39 - 0.55	0.17 - 0.27								
			Total PAHs (mg/kg)	Site	2/3 (66.7%)	0.40	0.26 - 1.5	N/A	--	--	--	--	Maximum Detect	1.2	1
				Background	3/10 (30.0%)	0.39 - 0.55	0.87 - 1.2								

Table A-2
Hypothesis Testing and Background Screening Levels - Sediment
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DePue Lake, DePue, Illinois

								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Angler (Boat) (Lake-wide)	Surface Sediment	Metals	Aluminum (mg/kg)	Site	83/83 (100%)	--	1,000 - 25,000	WMW Test (w/out NDs)	-1.652	-1.645	< 0.05	No	Normal 95% UPL(t)	21,000	2
				Background	12/12 (100%)	--	12,000 - 20,000								
			Antimony (mg/kg)	Site	9/44 (20.5%)	7.0 - 19	0.64 - 1.2	N/A	--	--	--	--	Maximum Detect	1.8	0
				Background	2/11 (18.2%)	11 - 17	0.86 - 1.8								
			Arsenic (mg/kg)	Site	83/83 (100%)	--	2.4 - 110	WMW Test (w/out NDs)	3.389	-1.645	1	Yes	Nonparametric 95% UPL	7.3	67
				Background	12/12 (100%)	--	4.9 - 7.3								
			Barium (mg/kg)	Site	83/83 (100%)	--	50 - 2,900	WMW Test (w/out NDs)	3.389	-1.645	1	Yes	Normal 95% UPL(t)	170	49
				Background	12/12 (100%)	--	110 - 160								
			Beryllium (mg/kg)	Site	83/83 (100%)	--	0.14 - 1.4	WMW Test (w/out NDs)	-0.0672	-1.645	0.473	Yes	Normal 95% UPL(t)	1.0	4
				Background	12/12 (100%)	--	0.63 - 1.0								
			Cadmium (mg/kg)	Site	82/83 (98.8%)	0.65	1.3 - 840	Gehan Test	5.019	-1.645	1	Yes	Normal 95% UPL(t)	2.7	78
				Background	12/12 (100%)	--	1.4 - 2.5								
			Calcium (mg/kg)	Site	83/83 (100%)	--	11,000 - 85,000	WMW Test (w/out NDs)	-0.0672	-1.645	0.473	Yes	Normal 95% UPL(t)	43,000	18
				Background	12/12 (100%)	--	31,000 - 43,000								
			Chromium (mg/kg)	Site	83/83 (100%)	--	3.3 - 79	WMW Test (w/out NDs)	1.059	-1.645	0.855	Yes	Normal 95% UPL(t)	46	21
				Background	12/12 (100%)	--	32 - 44								
			Cobalt (mg/kg)	Site	83/83 (100%)	--	1.8 - 110	WMW Test (w/out NDs)	3.624	-1.645	1	Yes	Normal 95% UPL(t)	11	62
				Background	12/12 (100%)	--	7.0 - 10								
			Copper (mg/kg)	Site	83/83 (100%)	--	10 - 6,000	WMW Test (w/out NDs)	4.638	-1.645	1	Yes	Normal 95% UPL(t)	47	73
				Background	12/12 (100%)	--	34 - 47								
			Cyanide (mg/kg)	Site	9/24 (37.5%)	0.22 - 7.0	0.36 - 1.1	N/A	--	--	--	--	--	--	9
				Background	0/6 (0.0%)	4.9 - 6.3	--								
			Iron (mg/kg)	Site	83/83 (100%)	--	4,500 - 74,000	WMW Test (w/out NDs)	0.941	-1.645	0.827	Yes	Normal 95% UPL(t)	30,000	8
				Background	12/12 (100%)	--	19,000 - 29,000								
			Lead (mg/kg)	Site	83/83 (100%)	--	8.4 - 13,000	WMW Test (w/out NDs)	4.823	-1.645	1	Yes	Normal 95% UPL(t)	44	68
				Background	12/12 (100%)	--	30 - 44								
			Magnesium (mg/kg)	Site	83/83 (100%)	--	4,300 - 33,000	WMW Test (w/out NDs)	0.745	-1.645	0.772	Yes	Normal 95% UPL(t)	12,000	19
				Background	12/12 (100%)	--	9,900 - 12,000								
			Manganese (mg/kg)	Site	83/83 (100%)	--	170 - 2,800	WMW Test (w/out NDs)	1.54	-1.645	0.938	Yes	WH Gamma 95% UPL	790	40
				Background	12/12 (100%)	--	480 - 730								
			Mercury (mg/kg)	Site	70/83 (84.3%)	0.10 - 0.36	0.097 - 32	Gehan Test	2.944	-1.645	0.998	Yes	Normal 95% UPL(t)	0.26	45
				Background	12/12 (100%)	--	0.12 - 0.27								
			Nickel (mg/kg)	Site	82/83 (98.8%)	4.6	8.8 - 63	Gehan Test	0.863	-1.645	0.806	Yes	Normal 95% UPL(t)	38	12
				Background	12/12 (100%)	--	23 - 39								
			Potassium (mg/kg)	Site	83/83 (100%)	--	160 - 3,800	WMW Test (w/out NDs)	-2.291	-1.645	< 0.05	No	Normal 95% UPL(t)	3,500	1
				Background	12/12 (100%)	--	2,100 - 3,300								
			Selenium (mg/kg)	Site	44/83 (53.0%)	4.1 - 12	0.35 - 380	N/A	--	--	--	--	--	--	44
				Background	0/12 (0.0%)	6.1 - 10	--								
			Silver (mg/kg)	Site	82/83 (98.8%)	1.3	0.056 - 72	Gehan Test	4.521	-1.645	1	Yes	Nonparametric 95% UPL	0.69	69
				Background	12/12 (100%)	--	0.30 - 0.69								
			Sodium (mg/kg)	Site	31/83 (37.3%)	580 - 6,200	130 - 660	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	430	4
				Background	5/12 (41.7%)	930 - 1,200	290 - 400								
			Thallium (mg/kg)	Site	31/83 (37.3%)	3.4 - 8.7	0.36 - 2.7	Gehan Test	-2.84	-1.645	< 0.05	No	95% Kaplan-Meier UPL(t)	2.4	1
				Background	11/12 (91.7%)	6.0	0.70 - 2.4								
			Vanadium (mg/kg)	Site	83/83 (100%)	--	5.4 - 56	WMW Test (w/out NDs)	-0.616	-1.645	0.269	Yes	Normal 95% UPL(t)	37	4
				Background	12/12 (100%)	--	22 - 34								
			Zinc (mg/kg)	Site	83/83 (100%)	--	53 - 65,000	WMW Test (w/out NDs)	5.349	-1.645	1	Yes	Normal 95% UPL(t)	240	81
				Background	12/12 (100%)	--	160 - 230								
		Metals-SPLP	Arsenic (mg/L)	Site	6/21 (28.6%)	0.0028 - 0.010	0.0028 - 0.014	N/A	--	--	--	--	Maximum Detect	0.0053	5
				Background	3/5 (60.0%)	0.0027 - 0.0027	0.0028 - 0.0053								
			Barium (mg/L)	Site	21/21 (100%)	--	0.019 - 0.14	N/A	--	--	--	--	Maximum Detect	0.079	2
				Background	5/5 (100%)	--	0.048 - 0.079								
			Cadmium (mg/L)	Site	9/21 (42.9%)	0.00020 - 0.0050	0.00026 - 0.015	N/A	--	--	--	--	--	--	9
				Background	0/5 (0.0%)	0.00020 - 0.00020	--								
			Chromium (mg/L)	Site	7/21 (33.3%)	0.010 - 0.010	0.00055 - 0.012	N/A	--	--	--	--	Maximum Detect	0.019	0
				Background	5/5 (100%)	--	0.0090 - 0.019								
			Lead (mg/L)	Site	11/21 (52.4%)	0.0010 - 0.0032	0.0022 - 0.13	N/A	--	--	--	--	--	--	11
				Background	0/5 (0.0%)	0.0052 - 0.015	--								
			Mercury (mg/L)	Site	0/21 (0.0%)	0.00010 - 0.00010	--	N/A	--	--	--	--	--	--	0
				Background	0/5 (0.0%)	0.00010 - 0.00010	--								
			Selenium (mg/L)	Site	1/17 (5.9%)	0.0027 - 0.0027	0.0051	N/A	--	--	--	--	--	--	1
				Background	0/5 (0.0%)	0.0029 - 0.0029	--								
			Silver (mg/L)	Site	2/21 (9.5%)	0.00070 - 0.0012	0.00073 - 0.0013	N/A	--	--	--	--	--	--	2
				Background	0/5 (0.0%)	0.00050 - 0.00050	--								

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DePue Lake, DePue, Illinois

								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Angler (Boat) (Lake-wide)	Surface Sediment	Miscellaneous	Total Carbon (mg/kg)	Site	9/9 (100%)	--	54,000 - 130,000	N/A	--	--	--	--	Maximum Detect	63,000	6
				Background	5/5 (100%)	--	44,000 - 63,000								
			Total Organic Carbon (mg/kg)	Site	83/83 (100%)	--	2,500 - 150,000	WMW Test (w/out NDs)	2.621	-1.645	0.996	Yes	Nonparametric 95% UPL	36,000	14
				Background	12/12 (100%)	--	19,000 - 36,000								
			Total Organic Carbon (mg/kg) No Outliers	Site	83/83 (100%)	--	2,500 - 150,000	WMW Test (w/out NDs)	3.076	-1.645	0.999	Yes	Nonparametric 95% UPL	33,000	20
				Background	11/11 (100%)	--	19,000 - 33,000								
		Miscellaneous-SPLP	Ammonia (mg/L)	Site	16/16 (100%)	--	0.089 - 4.8	N/A	--	--	--	--	Maximum Detect	2.4	2
				Background	5/5 (100%)	--	0.36 - 2.4								
			Fluoride (mg/L)	Site	17/24 (70.8%)	0.20 - 0.20	0.10 - 1.9	N/A	--	--	--	--	Maximum Detect	0.18	12
				Background	1/6 (16.7%)	0.20 - 0.20	0.18								
		PCBs	Aroclor 1016 (mg/kg)	Site	0/24 (0.0%)	0.017 - 0.073	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	0.024 - 0.031	--								
			Aroclor 1221 (mg/kg)	Site	0/24 (0.0%)	0.024 - 0.10	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	0.034 - 0.044	--								
			Aroclor 1232 (mg/kg)	Site	0/24 (0.0%)	0.012 - 0.052	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	0.017 - 0.022	--								
			Aroclor 1242 (mg/kg)	Site	0/24 (0.0%)	0.012 - 0.052	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	0.017 - 0.022	--								
			Aroclor 1248 (mg/kg)	Site	0/24 (0.0%)	0.012 - 0.052	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	0.017 - 0.022	--								
			Aroclor 1254 (mg/kg)	Site	13/24 (54.2%)	0.015 - 0.052	0.021 - 0.11	N/A	--	--	--	--	Maximum Detect	0.068	7
				Background	2/6 (33.3%)	0.017 - 0.022	0.053 - 0.068								
			Aroclor 1260 (mg/kg)	Site	2/24 (8.3%)	0.012 - 0.052	0.033 - 0.034	N/A	--	--	--	--	--	--	2
				Background	0/6 (0.0%)	0.017 - 0.022	--								
			Total PCBs (mg/kg)	Site	14/24 (58.3%)	0.030 - 0.10	0.021 - 0.12	N/A	--	--	--	--	Maximum Detect	0.068	7
				Background	2/6 (33.3%)	0.034 - 0.044	0.053 - 0.068								
		Pesticides/Herbicides	4,4'-DDD (ug/kg)	Site	10/24 (41.7%)	2.3 - 10	0.73 - 23	N/A	--	--	--	--	--	--	10
				Background	0/6 (0.0%)	2.9 - 4.2	--								
			4,4'-DDE (ug/kg)	Site	20/24 (83.3%)	3.3 - 4.4	2.2 - 15	N/A	--	--	--	--	Maximum Detect	7.2	7
				Background	6/6 (100%)	--	2.3 - 7.2								
			4,4'-DDT (ug/kg)	Site	6/24 (25.0%)	2.3 - 10	1.8 - 10	N/A	--	--	--	--	Maximum Detect	6.2	1
				Background	6/6 (100%)	--	2.7 - 6.2								
			Aldrin (ug/kg)	Site	4/24 (16.7%)	1.2 - 5.2	1.2 - 3.6	N/A	--	--	--	--	--	--	4
				Background	0/6 (0.0%)	1.7 - 2.2	--								
			Alpha-BHC (ug/kg)	Site	5/24 (20.8%)	1.2 - 3.5	0.76 - 6.7	N/A	--	--	--	--	--	--	5
				Background	0/6 (0.0%)	1.7 - 2.2	--								
			Alpha-Chlordane (ug/kg)	Site	3/24 (12.5%)	1.2 - 5.2	1.7 - 4.5	N/A	--	--	--	--	Maximum Detect	0.71	3
				Background	5/6 (83.3%)	2.0	0.46 - 0.71								
			Beta-BHC (ug/kg)	Site	13/23 (56.5%)	0.59 - 2.6	1.5 - 4.1	N/A	--	--	--	--	Maximum Detect	1.9	11
				Background	5/6 (83.3%)	0.97	0.58 - 1.9								
			delta-BHC (ug/kg)	Site	6/23 (26.1%)	1.2 - 3.5	0.85 - 17	N/A	--	--	--	--	--	--	6
				Background	0/6 (0.0%)	1.7 - 2.2	--								
			Dieldrin (ug/kg)	Site	8/24 (33.3%)	2.3 - 10	1.4 - 6.1	N/A	--	--	--	--	Maximum Detect	3.9	3
				Background	6/6 (100%)	--	2.0 - 3.9								
			Endosulfan I (ug/kg)	Site	1/24 (4.2%)	1.2 - 5.2	5.2	N/A	--	--	--	--	--	--	1
				Background	0/6 (0.0%)	1.7 - 2.2	--								
			Endosulfan II (ug/kg)	Site	1/24 (4.2%)	2.3 - 10	12	N/A	--	--	--	--	Maximum Detect	1.4	1
				Background	1/6 (16.7%)	3.3 - 4.2	1.4								
			Endosulfan sulfate (ug/kg)	Site	0/23 (0.0%)	2.3 - 10	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	3.3 - 4.2	--								
			Endrin (ug/kg)	Site	2/24 (8.3%)	2.3 - 10	1.7 - 8.2	N/A	--	--	--	--	--	--	2
				Background	0/6 (0.0%)	3.3 - 4.2	--								
			Endrin aldehyde (ug/kg)	Site	8/24 (33.3%)	2.3 - 10	1.7 - 4.9	N/A	--	--	--	--	--	--	8
				Background	0/6 (0.0%)	3.3 - 4.2	--								
			Endrin ketone (ug/kg)	Site	2/24 (8.3%)	2.3 - 10	2.1 - 11	N/A	--	--	--	--	--	--	2
				Background	0/6 (0.0%)	3.3 - 4.2	--								
			gamma-BHC (Lindane) (ug/kg)	Site	3/24 (12.5%)	1.2 - 3.5	4.9 - 34	N/A	--	--	--	--	--	--	3
				Background	0/6 (0.0%)	1.7 - 2.2	--								
			gamma-Chlordane (ug/kg)	Site	14/24 (58.3%)	1.7 - 5.2	1.9 - 12	N/A	--	--	--	--	Maximum Detect	7.5	10
				Background	6/6 (100%)	--	4.2 - 7.5								
			Heptachlor (ug/kg)	Site	4/24 (16.7%)	1.2 - 5.2	1.9 - 4.8	N/A	--	--	--	--	Maximum Detect	0.68	4
				Background	3/6 (50.0%)	1.8 - 1.9	0.51 - 0.68								
			Heptachlor epoxide (ug/kg)	Site	10/24 (41.7%)	1.7 - 5.2	0.63 - 8.4	N/A	--	--	--	--	Maximum Detect	3.1	2
				Background	2/6 (33.3%)	1.9 - 2.2	2.3 - 3.1								

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								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Angler (Boat) (Lake-wide)	Surface Sediment	Pesticides/Herbicides	Methoxychlor (ug/kg)	Site	1/24 (4.2%)	12 - 52	58	N/A	--	--	--	--	--	--	1
				Background	0/6 (0.0%)	17 - 22	--								
			Toxaphene (ug/kg)	Site	0/24 (0.0%)	58 - 250	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	83 - 110	--								
		SVOCs	1-Methylnaphthalene (mg/kg)	Site	23/24 (95.8%)	0.0055	0.00098 - 2.7	N/A	--	--	--	--	Maximum Detect	0.0079	11
				Background	6/6 (100%)	--	0.0038 - 0.0079								
			2-Methylnaphthalene (mg/kg)	Site	23/24 (95.8%)	0.0055	0.0013 - 3.4	N/A	--	--	--	--	Maximum Detect	0.016	9
				Background	6/6 (100%)	--	0.0065 - 0.016								
			Acenaphthene (mg/kg)	Site	23/24 (95.8%)	0.0055	0.0017 - 2.3	N/A	--	--	--	--	Maximum Detect	0.015	8
				Background	6/6 (100%)	--	0.0061 - 0.015								
			Acenaphthylene (mg/kg)	Site	24/24 (100%)	--	0.00093 - 0.62	N/A	--	--	--	--	Maximum Detect	0.083	2
				Background	6/6 (100%)	--	0.031 - 0.083								
		SVOCs	Anthracene (mg/kg)	Site	24/24 (100%)	--	0.0029 - 3.2	N/A	--	--	--	--	Maximum Detect	0.078	4
				Background	6/6 (100%)	--	0.026 - 0.078								
			Benzo(a)anthracene (mg/kg)	Site	24/24 (100%)	--	0.0095 - 4.0	N/A	--	--	--	--	Maximum Detect	0.23	5
				Background	6/6 (100%)	--	0.083 - 0.23								
			Benzo(a)pyrene (mg/kg)	Site	24/24 (100%)	--	0.0069 - 3.4	N/A	--	--	--	--	Maximum Detect	0.43	1
				Background	6/6 (100%)	--	0.12 - 0.43								
			Benzo(b)fluoranthene (mg/kg)	Site	24/24 (100%)	--	0.0070 - 2.8	N/A	--	--	--	--	Maximum Detect	0.41	2
				Background	6/6 (100%)	--	0.15 - 0.41								
			Benzo(g,h,i)perylene (mg/kg)	Site	24/24 (100%)	--	0.0031 - 1.2	N/A	--	--	--	--	Maximum Detect	0.38	1
				Background	6/6 (100%)	--	0.12 - 0.38								
			Benzo(k)fluoranthene (mg/kg)	Site	24/24 (100%)	--	0.0069 - 3.0	N/A	--	--	--	--	Maximum Detect	0.39	2
				Background	6/6 (100%)	--	0.10 - 0.39								
			Chrysene (mg/kg)	Site	24/24 (100%)	--	0.0085 - 3.5	N/A	--	--	--	--	Maximum Detect	0.42	3
				Background	6/6 (100%)	--	0.11 - 0.42								
			Dibenz(a,h)anthracene (mg/kg)	Site	24/24 (100%)	--	0.0012 - 0.55	N/A	--	--	--	--	Maximum Detect	0.083	1
				Background	6/6 (100%)	--	0.033 - 0.083								
			Fluoranthene (mg/kg)	Site	24/24 (100%)	--	0.021 - 11	N/A	--	--	--	--	Maximum Detect	0.52	5
				Background	6/6 (100%)	--	0.14 - 0.52								
			Fluorene (mg/kg)	Site	24/24 (100%)	--	0.00090 - 2.7	N/A	--	--	--	--	Maximum Detect	0.023	8
				Background	6/6 (100%)	--	0.010 - 0.023								
			Indeno(1,2,3-cd)pyrene (mg/kg)	Site	24/24 (100%)	--	0.0041 - 1.7	N/A	--	--	--	--	Maximum Detect	0.42	1
				Background	6/6 (100%)	--	0.13 - 0.42								
			Naphthalene (mg/kg)	Site	17/24 (70.8%)	0.0055 - 0.025	0.0012 - 2.8	N/A	--	--	--	--	Maximum Detect	0.026	3
				Background	6/6 (100%)	--	0.0093 - 0.026								
			Phenanthrene (mg/kg)	Site	24/24 (100%)	--	0.0099 - 14	N/A	--	--	--	--	Maximum Detect	0.11	13
				Background	6/6 (100%)	--	0.046 - 0.11								
			Pyrene (mg/kg)	Site	24/24 (100%)	--	0.017 - 8.5	N/A	--	--	--	--	Maximum Detect	0.64	3
				Background	6/6 (100%)	--	0.18 - 0.64								
			Total PAHs (mg/kg)	Site	24/24 (100%)	--	0.10 - 65	N/A	--	--	--	--	Maximum Detect	4.3	3
				Background	6/6 (100%)	--	1.3 - 4.3								
	Depth-weighted Sediment	Metals	Aluminum (mg/kg)	Site	78/78 (100%)	--	3,400 - 21,000	WMW Test (w/out NDs)	-1.027	-1.645	0.152	Yes	Normal 95% UPL(t)	21,000	0
				Background	12/12 (100%)	--	14,000 - 21,000								
			Antimony (mg/kg)	Site	7/37 (18.9%)	3.9 - 16	4.2 - 10	N/A	--	--	--	--	Maximum Detect	6.6	6
				Background	2/11 (18.2%)	11 - 14	5.0 - 6.6								
			Arsenic (mg/kg)	Site	78/78 (100%)	--	4.5 - 55	WMW Test (w/out NDs)	2.641	-1.645	0.996	Yes	Normal 95% UPL(t)	9.5	44
				Background	12/12 (100%)	--	8.0 - 9.5								
			Barium (mg/kg)	Site	78/78 (100%)	--	100 - 2,900	WMW Test (w/out NDs)	3.721	-1.645	1	Yes	Normal 95% UPL(t)	180	55
				Background	12/12 (100%)	--	150 - 180								
			Beryllium (mg/kg)	Site	78/78 (100%)	--	0.33 - 1.2	WMW Test (w/out NDs)	-0.475	-1.645	0.317	Yes	Normal 95% UPL(t)	1.1	3
				Background	12/12 (100%)	--	0.82 - 1.1								
			Cadmium (mg/kg)	Site	78/78 (100%)	--	2.8 - 770	WMW Test (w/out NDs)	5.062	-1.645	1	Yes	Normal 95% UPL(t)	5.3	70
				Background	12/12 (100%)	--	1.8 - 4.9								
			Calcium (mg/kg)	Site	78/78 (100%)	--	9,600 - 140,000	WMW Test (w/out NDs)	0.142	-1.645	0.557	Yes	Normal 95% UPL(t)	31,000	18
				Background	12/12 (100%)	--	23,000 - 31,000								
			Chromium (mg/kg)	Site	78/78 (100%)	--	11 - 76	WMW Test (w/out NDs)	-0.849	-1.645	0.198	Yes	Normal 95% UPL(t)	64	7
				Background	12/12 (100%)	--	39 - 63								
			Cobalt (mg/kg)	Site	78/78 (100%)	--	4.6 - 96	WMW Test (w/out NDs)	4.332	-1.645	1	Yes	Normal 95% UPL(t)	11	63
				Background	12/12 (100%)	--	8.5 - 11								
			Copper (mg/kg)	Site	78/78 (100%)	--	19 - 3,500	WMW Test (w/out NDs)	4.528	-1.645	1	Yes	Normal 95% UPL(t)	58	65
				Background	12/12 (100%)	--	36 - 56								
			Cyanide (mg/kg)	Site	4/4 (100%)	--	0.81 - 1.5	N/A	--	--	--	--	--	--	4
				Background	0/1 (0.0%)	5.2	--								
			Iron (mg/kg)	Site	78/78 (100%)	--	9,900 - 58,000	WMW Test (w/out NDs)	1.335	-1.645	0.909	Yes	Normal 95% UPL(t)	30,000	14
				Background	12/12 (100%)	--	23,000 - 30,000								

Table A-2
Hypothesis Testing and Background Screening Levels - Sediment
OU5 Baseline Human Health Risk Assessment
DePue Lake, DePue, Illinois

								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Angler (Boat) (Lake-wide)	Depth-weighted Sediment	Metals	Lead (mg/kg)	Site	78/78 (100%)	--	34 - 6,200	WMW Test (w/out NDs)	4.22	-1.645	1	Yes	Normal 95% UPL(t)	63	60
				Background	12/12 (100%)	--	34 - 58								
			Magnesium (mg/kg)	Site	78/78 (100%)	--	4,600 - 16,000	WMW Test (w/out NDs)	2.439	-1.645	0.993	Yes	Normal 95% UPL(t)	10,000	33
				Background	12/12 (100%)	--	8,800 - 10,000								
			Manganese (mg/kg)	Site	78/78 (100%)	--	340 - 2,500	WMW Test (w/out NDs)	1.953	-1.645	0.975	Yes	Normal 95% UPL(t)	720	35
				Background	12/12 (100%)	--	540 - 710								
			Mercury (mg/kg)	Site	74/78 (94.9%)	0.23 - 0.26	0.13 - 16	Gehan Test	2.041	-1.645	0.979	Yes	Normal 95% UPL(t)	0.36	37
				Background	12/12 (100%)	--	0.16 - 0.34								
			Nickel (mg/kg)	Site	78/78 (100%)	--	11 - 50	WMW Test (w/out NDs)	-1.964	-1.645	< 0.05	No	Normal 95% UPL(t)	49	2
				Background	12/12 (100%)	--	34 - 50								
			Potassium (mg/kg)	Site	78/78 (100%)	--	450 - 3,300	WMW Test (w/out NDs)	-0.766	-1.645	0.222	Yes	Normal 95% UPL(t)	3,100	3
				Background	12/12 (100%)	--	2,000 - 3,100								
			Selenium (mg/kg)	Site	58/78 (74.4%)	4.2 - 10	0.40 - 110	N/A	--	--	--	--	--	--	58
				Background	0/12 (0.0%)	5.7 - 8.4	--								
			Silver (mg/kg)	Site	78/78 (100%)	--	0.31 - 37	WMW Test (w/out NDs)	2.415	-1.645	0.992	Yes	WH Gamma 95% UPL	1.5	22
				Background	12/12 (100%)	--	0.30 - 1.1								
			Sodium (mg/kg)	Site	37/78 (47.4%)	600 - 1,300	210 - 3,400	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	850	4
				Background	5/12 (41.7%)	910 - 1,100	240 - 760								
			Thallium (mg/kg)	Site	43/78 (55.1%)	3.6 - 7.0	0.66 - 4.6	Gehan Test	0.0717	-1.645	0.529	Yes	HW Gamma 95% UPL	3.0	9
				Background	12/12 (100%)	--	0.99 - 3.3								
			Vanadium (mg/kg)	Site	78/78 (100%)	--	13 - 43	WMW Test (w/out NDs)	-0.196	-1.645	0.422	Yes	Normal 95% UPL(t)	39	5
				Background	12/12 (100%)	--	26 - 38								
			Vanadium (mg/kg)	Site	78/78 (100%)	--	13 - 43	WMW Test (w/out NDs)	0.206	-1.645	0.581	Yes	Normal 95% UPL(t)	37	9
			No Outliers	Background	11/11 (100%)	--	26 - 37								
			Zinc (mg/kg)	Site	78/78 (100%)	--	450 - 39,000	WMW Test (w/out NDs)	5.561	-1.645	1	Yes	Normal 95% UPL(t)	320	78
				Background	12/12 (100%)	--	170 - 300								
		Miscellaneous	Total Organic Carbon (mg/kg)	Site	78/78 (100%)	--	11,000 - 120,000	WMW Test (w/out NDs)	2.884	-1.645	0.998	Yes	Nonparametric 95% UPL	37,000	10
				Background	12/12 (100%)	--	20,000 - 37,000								
			Total Organic Carbon (mg/kg)	Site	78/78 (100%)	--	11,000 - 120,000	WMW Test (w/out NDs)	3.931	-1.645	1	Yes	Normal 95% UPL(t)	25,000	56
			No Outliers	Background	10/10 (100%)	--	20,000 - 25,000								
		Miscellaneous-SPLP	Fluoride (mg/L)	Site	3/4 (75.0%)	0.20	0.28 - 9.1	N/A	--	--	--	--	Maximum Detect	0.29	2
				Background	1/1 (100%)	--	0.29								
		PCBs	Aroclor 1016 (mg/kg)	Site	0/4 (0.0%)	0.040 - 0.062	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	0.026	--								
			Aroclor 1221 (mg/kg)	Site	0/4 (0.0%)	0.058 - 0.092	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	0.036	--								
			Aroclor 1232 (mg/kg)	Site	0/4 (0.0%)	0.028 - 0.046	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	0.018	--								
			Aroclor 1242 (mg/kg)	Site	0/4 (0.0%)	0.028 - 0.046	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	0.018	--								
			Aroclor 1248 (mg/kg)	Site	1/4 (25.0%)	0.028 - 0.046	0.081	N/A	--	--	--	--	Maximum Detect	0.10	0
				Background	1/1 (100%)	--	0.10								
			Aroclor 1254 (mg/kg)	Site	4/4 (100%)	--	0.025 - 0.062	N/A	--	--	--	--	Maximum Detect	0.087	0
				Background	1/1 (100%)	--	0.087								
			Aroclor 1260 (mg/kg)	Site	1/4 (25.0%)	0.028 - 0.046	0.032	N/A	--	--	--	--	--	--	1
				Background	0/1 (0.0%)	0.018	--								
			Total PCBs (mg/kg)	Site	4/4 (100%)	--	0.040 - 0.13	N/A	--	--	--	--	Maximum Detect	0.18	0
				Background	1/1 (100%)	--	0.18								
		Pesticides/Herbicides	4,4'-DDD (ug/kg)	Site	3/4 (75.0%)	6.6	3.1 - 10	N/A	--	--	--	--	Maximum Detect	3.3	2
				Background	1/1 (100%)	--	3.3								
			4,4'-DDE (ug/kg)	Site	4/4 (100%)	--	2.5 - 9.1	N/A	--	--	--	--	Maximum Detect	8.6	1
				Background	1/1 (100%)	--	8.6								
			4,4'-DDT (ug/kg)	Site	4/4 (100%)	--	4.0 - 6.0	N/A	--	--	--	--	Maximum Detect	5.7	1
				Background	1/1 (100%)	--	5.7								
			Aldrin (ug/kg)	Site	2/4 (50.0%)	2.4 - 2.8	1.6 - 4.3	N/A	--	--	--	--	--	--	2
				Background	0/1 (0.0%)	1.8	--								
			Alpha-BHC (ug/kg)	Site	3/4 (75.0%)	2.4	0.68 - 6.1	N/A	--	--	--	--	Maximum Detect	2.0	2
				Background	1/1 (100%)	--	2.0								
			Alpha-Chlordane (ug/kg)	Site	2/4 (50.0%)	3.4 - 4.4	1.8 - 2.7	N/A	--	--	--	--	Maximum Detect	1.2	2
				Background	1/1 (100%)	--	1.2								
			Beta-BHC (ug/kg)	Site	3/4 (75.0%)	2.4	1.5 - 2.7	N/A	--	--	--	--	Maximum Detect	1.7	2
				Background	1/1 (100%)	--	1.7								
			delta-BHC (ug/kg)	Site	3/4 (75.0%)	3.4	0.99 - 13	N/A	--	--	--	--	--	--	3
				Background	0/1 (0.0%)	1.8	--								
			Dieldrin (ug/kg)	Site	3/4 (75.0%)	4.6	3.4 - 9.1	N/A	--	--	--	--	Maximum Detect	4.9	2
				Background	1/1 (100%)	--	4.9								

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OU5 Baseline Human Health Risk Assessment
DePue Lake, DePue, Illinois

								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Angler (Boat) (Lake-wide)	Depth-weighted Sediment	Pesticides/Herbicides	Endosulfan I (ug/kg)	Site	0/4 (0.0%)	2.4 - 4.4	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	1.8	--								
			Endosulfan II (ug/kg)	Site	0/4 (0.0%)	4.6 - 8.4	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	3.5	--								
			Endosulfan sulfate (ug/kg)	Site	0/4 (0.0%)	4.6 - 8.4	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	3.5	--								
			Endrin (ug/kg)	Site	0/4 (0.0%)	4.6 - 8.4	--	N/A	--	--	--	--	Maximum Detect	3.1	0
				Background	1/1 (100%)	--	3.1								
			Endrin aldehyde (ug/kg)	Site	0/4 (0.0%)	4.6 - 8.4	--	N/A	--	--	--	--	Maximum Detect	3.1	0
				Background	1/1 (100%)	--	3.1								
			Endrin ketone (ug/kg)	Site	1/4 (25.0%)	5.6 - 8.4	4.0	N/A	--	--	--	--	--	--	1
				Background	0/1 (0.0%)	3.5	--								
			gamma-BHC (Lindane) (ug/kg)	Site	2/4 (50.0%)	2.4 - 3.4	2.8 - 20	N/A	--	--	--	--	--	--	2
				Background	0/1 (0.0%)	1.8	--								
			gamma-Chlordane (ug/kg)	Site	4/4 (100%)	--	1.3 - 6.4	N/A	--	--	--	--	Maximum Detect	5.5	1
				Background	1/1 (100%)	--	5.5								
			Heptachlor (ug/kg)	Site	3/4 (75.0%)	2.4	1.3 - 6.6	N/A	--	--	--	--	--	--	3
				Background	0/1 (0.0%)	1.8	--								
			Heptachlor epoxide (ug/kg)	Site	1/4 (25.0%)	2.8 - 4.4	2.2	N/A	--	--	--	--	Maximum Detect	4.2	0
				Background	1/1 (100%)	--	4.2								
			Methoxychlor (ug/kg)	Site	0/4 (0.0%)	24 - 44	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	18	--								
			Toxaphene (ug/kg)	Site	0/4 (0.0%)	140 - 240	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	88	--								
		SVOCs	1-Methylnaphthalene (mg/kg)	Site	4/4 (100%)	--	0.0032 - 0.22	N/A	--	--	--	--	Maximum Detect	0.0057	3
				Background	1/1 (100%)	--	0.0057								
			2-Methylnaphthalene (mg/kg)	Site	4/4 (100%)	--	0.0054 - 0.31	N/A	--	--	--	--	Maximum Detect	0.014	2
				Background	1/1 (100%)	--	0.014								
			Acenaphthene (mg/kg)	Site	4/4 (100%)	--	0.011 - 0.67	N/A	--	--	--	--	Maximum Detect	0.016	1
				Background	1/1 (100%)	--	0.016								
			Acenaphthylene (mg/kg)	Site	4/4 (100%)	--	0.013 - 0.12	N/A	--	--	--	--	Maximum Detect	0.088	1
				Background	1/1 (100%)	--	0.088								
		SVOCs	Anthracene (mg/kg)	Site	4/4 (100%)	--	0.027 - 0.99	N/A	--	--	--	--	Maximum Detect	0.086	1
				Background	1/1 (100%)	--	0.086								
			Benzo(a)anthracene (mg/kg)	Site	4/4 (100%)	--	0.082 - 1.4	N/A	--	--	--	--	Maximum Detect	0.21	1
				Background	1/1 (100%)	--	0.21								
			Benzo(a)pyrene (mg/kg)	Site	4/4 (100%)	--	0.072 - 1.2	N/A	--	--	--	--	Maximum Detect	0.23	1
				Background	1/1 (100%)	--	0.23								
			Benzo(b)fluoranthene (mg/kg)	Site	4/4 (100%)	--	0.078 - 1.0	N/A	--	--	--	--	Maximum Detect	0.23	1
				Background	1/1 (100%)	--	0.23								
			Benzo(g,h,i)perylene (mg/kg)	Site	4/4 (100%)	--	0.056 - 0.47	N/A	--	--	--	--	Maximum Detect	0.20	1
				Background	1/1 (100%)	--	0.20								
			Benzo(k)fluoranthene (mg/kg)	Site	4/4 (100%)	--	0.061 - 1.1	N/A	--	--	--	--	Maximum Detect	0.21	1
				Background	1/1 (100%)	--	0.21								
			Chrysene (mg/kg)	Site	4/4 (100%)	--	0.10 - 1.3	N/A	--	--	--	--	Maximum Detect	0.25	1
				Background	1/1 (100%)	--	0.25								
			Dibenz(a,h)anthracene (mg/kg)	Site	4/4 (100%)	--	0.018 - 0.20	N/A	--	--	--	--	Maximum Detect	0.062	1
				Background	1/1 (100%)	--	0.062								
			Fluoranthene (mg/kg)	Site	4/4 (100%)	--	0.18 - 3.7	N/A	--	--	--	--	Maximum Detect	0.31	2
				Background	1/1 (100%)	--	0.31								
			Fluorene (mg/kg)	Site	4/4 (100%)	--	0.014 - 0.65	N/A	--	--	--	--	Maximum Detect	0.030	2
				Background	1/1 (100%)	--	0.030								
			Indeno(1,2,3-cd)pyrene (mg/kg)	Site	4/4 (100%)	--	0.054 - 0.63	N/A	--	--	--	--	Maximum Detect	0.22	1
				Background	1/1 (100%)	--	0.22								
			Naphthalene (mg/kg)	Site	2/4 (50.0%)	0.014 - 0.021	0.018 - 0.61	N/A	--	--	--	--	Maximum Detect	0.020	1
				Background	1/1 (100%)	--	0.020								
			Phenanthrene (mg/kg)	Site	4/4 (100%)	--	0.074 - 4.3	N/A	--	--	--	--	Maximum Detect	0.10	3
				Background	1/1 (100%)	--	0.10								
			Pyrene (mg/kg)	Site	4/4 (100%)	--	0.19 - 3.0	N/A	--	--	--	--	Maximum Detect	0.39	1
				Background	1/1 (100%)	--	0.39								
			Total PAHs (mg/kg)	Site	4/4 (100%)	--	1.0 - 22	N/A	--	--	--	--	Maximum Detect	2.7	1
				Background	1/1 (100%)	--	2.7								

Table A-2
Hypothesis Testing and Background Screening Levels - Sediment
OU5 Baseline Human Health Risk Assessment
DePue Lake, DePue, Illinois

								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Angler (Shoreline) (1A)	Surface Sediment	Metals	Aluminum (mg/kg)	Site	9/9 (100%)	--	2,500 - 17,000	WMW Test (w/out NDs)	10	31	< 0.05	No	Normal 95% UPL(t)	21,000	0
				Background	12/12 (100%)	--	12,000 - 20,000								
			Antimony (mg/kg)	Site	1/8 (12.5%)	7.2 - 8.6	0.96	N/A	--	--	--	--	Maximum Detect	1.8	0
				Background	2/11 (18.2%)	11 - 17	0.86 - 1.8								
			Arsenic (mg/kg)	Site	9/9 (100%)	--	4.2 - 27	WMW Test (w/out NDs)	68	31	0.849	Yes	Nonparametric 95% UPL	7.3	7
				Background	12/12 (100%)	--	4.9 - 7.3								
			Barium (mg/kg)	Site	9/9 (100%)	--	93 - 900	WMW Test (w/out NDs)	68	31	0.849	Yes	Normal 95% UPL(t)	170	5
				Background	12/12 (100%)	--	110 - 160								
			Beryllium (mg/kg)	Site	9/9 (100%)	--	0.20 - 0.82	WMW Test (w/out NDs)	12.5	31	< 0.05	No	Normal 95% UPL(t)	1.0	0
				Background	12/12 (100%)	--	0.63 - 1.0								
			Cadmium (mg/kg)	Site	8/9 (88.9%)	0.65	1.7 - 110	Gehan Test	2.203	-1.645	0.986	Yes	Normal 95% UPL(t)	2.7	7
				Background	12/12 (100%)	--	1.4 - 2.5								
			Calcium (mg/kg)	Site	9/9 (100%)	--	15,000 - 61,000	WMW Test (w/out NDs)	44	31	0.25	Yes	Normal 95% UPL(t)	43,000	2
				Background	12/12 (100%)	--	31,000 - 43,000								
			Chromium (mg/kg)	Site	9/9 (100%)	--	5.7 - 41	WMW Test (w/out NDs)	14	31	< 0.05	No	Normal 95% UPL(t)	46	0
				Background	12/12 (100%)	--	32 - 44								
			Cobalt (mg/kg)	Site	9/9 (100%)	--	1.9 - 14	WMW Test (w/out NDs)	26	31	< 0.05	No	Normal 95% UPL(t)	11	2
				Background	12/12 (100%)	--	7.0 - 10								
			Copper (mg/kg)	Site	9/9 (100%)	--	10 - 170	WMW Test (w/out NDs)	69	31	0.865	Yes	Normal 95% UPL(t)	47	5
				Background	12/12 (100%)	--	34 - 47								
			Cyanide (mg/kg)	Site	3/6 (50.0%)	0.22 - 3.4	0.36 - 1.1	N/A	--	--	--	--	--	--	3
				Background	0/6 (0.0%)	4.9 - 6.3	--								
			Iron (mg/kg)	Site	9/9 (100%)	--	11,000 - 28,000	WMW Test (w/out NDs)	18	31	< 0.05	No	Normal 95% UPL(t)	30,000	0
				Background	12/12 (100%)	--	19,000 - 29,000								
			Lead (mg/kg)	Site	9/9 (100%)	--	8.4 - 1,200	WMW Test (w/out NDs)	96	31	0.999	Yes	Normal 95% UPL(t)	44	8
				Background	12/12 (100%)	--	30 - 44								
			Magnesium (mg/kg)	Site	9/9 (100%)	--	5,400 - 33,000	WMW Test (w/out NDs)	73.5	31	0.922	Yes	Normal 95% UPL(t)	12,000	3
				Background	12/12 (100%)	--	9,900 - 12,000								
			Manganese (mg/kg)	Site	9/9 (100%)	--	170 - 960	WMW Test (w/out NDs)	27	31	< 0.05	No	WH Gamma 95% UPL	790	2
				Background	12/12 (100%)	--	480 - 730								
			Mercury (mg/kg)	Site	6/9 (66.7%)	0.10 - 0.13	0.097 - 0.69	N/A	--	--	--	--	Normal 95% UPL(t)	0.26	2
				Background	12/12 (100%)	--	0.12 - 0.27								
			Nickel (mg/kg)	Site	9/9 (100%)	--	8.8 - 31	WMW Test (w/out NDs)	12	31	< 0.05	No	Normal 95% UPL(t)	38	0
				Background	12/12 (100%)	--	23 - 39								
			Potassium (mg/kg)	Site	9/9 (100%)	--	290 - 2,800	WMW Test (w/out NDs)	12	31	< 0.05	No	Normal 95% UPL(t)	3,500	0
				Background	12/12 (100%)	--	2,100 - 3,300								
			Selenium (mg/kg)	Site	1/9 (11.1%)	4.2 - 11	0.78	N/A	--	--	--	--	--	--	1
				Background	0/12 (0.0%)	6.1 - 10	--								
			Silver (mg/kg)	Site	8/9 (88.9%)	1.3	0.32 - 10	Gehan Test	2.605	-1.645	0.995	Yes	Nonparametric 95% UPL	0.69	6
				Background	12/12 (100%)	--	0.30 - 0.69								
			Sodium (mg/kg)	Site	3/9 (33.3%)	600 - 1,400	190 - 390	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	430	0
				Background	5/12 (41.7%)	930 - 1,200	290 - 400								
			Thallium (mg/kg)	Site	7/9 (77.8%)	6.7 - 7.7	0.38 - 2.4	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	2.4	0
				Background	11/12 (91.7%)	6.0	0.70 - 2.4								

Table A-2
Hypothesis Testing and Background Screening Levels - Sediment
OU5 Baseline Human Health Risk Assessment
DePue Lake, DePue, Illinois

								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Angler (Shoreline) (1A)	Surface Sediment	Metals	Vanadium (mg/kg)	Site	9/9 (100%)	--	8.4 - 54	WMW Test (w/out NDs)	34	31	0.083	Yes	Normal 95% UPL(t)	37	1
				Background	12/12 (100%)	--	22 - 34								
			Zinc (mg/kg)	Site	9/9 (100%)	--	53 - 7,100	WMW Test (w/out NDs)	96	31	0.999	Yes	Normal 95% UPL(t)	240	8
				Background	12/12 (100%)	--	160 - 230								
		Metals-SPLP	Arsenic (mg/L)	Site	4/6 (66.7%)	0.0028 - 0.0033	0.0059 - 0.014	N/A	--	--	--	--	Maximum Detect	0.0053	4
				Background	3/5 (60.0%)	0.0027 - 0.0027	0.0028 - 0.0053								
			Barium (mg/L)	Site	6/6 (100%)	--	0.034 - 0.061	N/A	--	--	--	--	Maximum Detect	0.079	0
				Background	5/5 (100%)	--	0.048 - 0.079								
			Cadmium (mg/L)	Site	5/6 (83.3%)	0.00020	0.00026 - 0.015	N/A	--	--	--	--	--	--	5
				Background	0/5 (0.0%)	0.00020 - 0.00020	--								
			Chromium (mg/L)	Site	3/6 (50.0%)	0.010 - 0.010	0.0054 - 0.0087	N/A	--	--	--	--	Maximum Detect	0.019	0
				Background	5/5 (100%)	--	0.0090 - 0.019								
			Lead (mg/L)	Site	5/6 (83.3%)	0.0031	0.0022 - 0.13	N/A	--	--	--	--	--	--	5
				Background	0/5 (0.0%)	0.0052 - 0.015	--								
			Mercury (mg/L)	Site	0/6 (0.0%)	0.00010 - 0.00010	--	N/A	--	--	--	--	--	--	0
				Background	0/5 (0.0%)	0.00010 - 0.00010	--								
			Selenium (mg/L)	Site	1/2 (50.0%)	0.0027	0.0051	N/A	--	--	--	--	--	--	1
				Background	0/5 (0.0%)	0.0029 - 0.0029	--								
			Silver (mg/L)	Site	2/6 (33.3%)	0.00070 - 0.0012	0.00073 - 0.0013	N/A	--	--	--	--	--	--	2
				Background	0/5 (0.0%)	0.00050 - 0.00050	--								
		Miscellaneous	Total Organic Carbon (mg/kg)	Site	9/9 (100%)	--	7,000 - 86,000	WMW Test (w/out NDs)	64	31	0.772	Yes	Nonparametric 95% UPL	36,000	2
				Background	12/12 (100%)	--	19,000 - 36,000								
			Total Organic Carbon (mg/kg)	Site	9/9 (100%)	--	7,000 - 86,000	WMW Test (w/out NDs)	62	28	0.838	Yes	Nonparametric 95% UPL	33,000	3
			No Outliers	Background	11/11 (100%)	--	19,000 - 33,000								
		Miscellaneous-SPLP	Ammonia (mg/L)	Site	1/1 (100%)	--	0.18	N/A	--	--	--	--	Maximum Detect	2.4	0
				Background	5/5 (100%)	--	0.36 - 2.4								
			Fluoride (mg/L)	Site	1/6 (16.7%)	0.20 - 0.20	0.15	N/A	--	--	--	--	Maximum Detect	0.18	0
				Background	1/6 (16.7%)	0.20 - 0.20	0.18								
		PCBs	Aroclor 1016 (mg/kg)	Site	0/6 (0.0%)	0.017 - 0.045	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	0.024 - 0.031	--								
			Aroclor 1221 (mg/kg)	Site	0/6 (0.0%)	0.024 - 0.092	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	0.034 - 0.044	--								
			Aroclor 1232 (mg/kg)	Site	0/6 (0.0%)	0.012 - 0.045	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	0.017 - 0.022	--								
			Aroclor 1242 (mg/kg)	Site	0/6 (0.0%)	0.012 - 0.045	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	0.017 - 0.022	--								
			Aroclor 1248 (mg/kg)	Site	0/6 (0.0%)	0.012 - 0.045	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	0.017 - 0.022	--								
			Aroclor 1254 (mg/kg)	Site	2/6 (33.3%)	0.043 - 0.044	0.023 - 0.11	N/A	--	--	--	--	Maximum Detect	0.068	1
				Background	2/6 (33.3%)	0.017 - 0.022	0.053 - 0.068								
			Aroclor 1260 (mg/kg)	Site	0/6 (0.0%)	0.012 - 0.045	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	0.017 - 0.022	--								
			Total PCBs (mg/kg)	Site	2/6 (33.3%)	0.087 - 0.089	0.023 - 0.11	N/A	--	--	--	--	Maximum Detect	0.068	1
				Background	2/6 (33.3%)	0.034 - 0.044	0.053 - 0.068								
		Pesticides/Herbicides	4,4'-DDD (ug/kg)	Site	2/6 (33.3%)	2.3 - 4.4	4.2 - 11	N/A	--	--	--	--	--	--	2
				Background	0/6 (0.0%)	2.9 - 4.2	--								
			4,4'-DDE (ug/kg)	Site	3/6 (50.0%)	4.3 - 4.4	2.9 - 15	N/A	--	--	--	--	Maximum Detect	7.2	1
				Background	6/6 (100%)	--	2.3 - 7.2								
			4,4'-DDT (ug/kg)	Site	1/6 (16.7%)	2.3 - 4.5	2.2	N/A	--	--	--	--	Maximum Detect	6.2	0
				Background	6/6 (100%)	--	2.7 - 6.2								
			Aldrin (ug/kg)	Site	0/6 (0.0%)	1.2 - 2.3	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	1.7 - 2.2	--								
			Alpha-BHC (ug/kg)	Site	1/6 (16.7%)	1.2 - 2.3	0.76	N/A	--	--	--	--	--	--	1
				Background	0/6 (0.0%)	1.7 - 2.2	--								
			Alpha-Chlordane (ug/kg)	Site	1/6 (16.7%)	1.2 - 2.3	4.5	N/A	--	--	--	--	Maximum Detect	0.71	1
				Background	5/6 (83.3%)	2.0	0.46 - 0.71								
			Beta-BHC (ug/kg)	Site	0/5 (0.0%)	0.59 - 2.3	--	N/A	--	--	--	--	Maximum Detect	1.9	0
				Background	5/6 (83.3%)	0.97	0.58 - 1.9								
			delta-BHC (ug/kg)	Site	0/6 (0.0%)	1.2 - 2.3	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	1.7 - 2.2	--								
			Dieldrin (ug/kg)	Site	0/6 (0.0%)	2.3 - 4.5	--	N/A	--	--	--	--	Maximum Detect	3.9	0
				Background	6/6 (100%)	--	2.0 - 3.9								
			Endosulfan I (ug/kg)	Site	0/6 (0.0%)	1.2 - 2.3	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	1.7 - 2.2	--								
			Endosulfan II (ug/kg)	Site	0/6 (0.0%)	2.3 - 4.5	--	N/A	--	--	--	--	Maximum Detect	1.4	0
				Background	1/6 (16.7%)	3.3 - 4.2	1.4								

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Angler (Shoreline) (1A)	Surface Sediment	Pesticides/Herbicides	Endosulfan sulfate (ug/kg)	Site	0/6 (0.0%)	2.3 - 4.5	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	3.3 - 4.2	--								
			Endrin (ug/kg)	Site	0/6 (0.0%)	2.3 - 4.5	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	3.3 - 4.2	--								
			Endrin aldehyde (ug/kg)	Site	0/6 (0.0%)	2.3 - 4.5	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	3.3 - 4.2	--								
			Endrin ketone (ug/kg)	Site	0/6 (0.0%)	2.3 - 4.5	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	3.3 - 4.2	--								
			gamma-BHC (Lindane) (ug/kg)	Site	0/6 (0.0%)	1.2 - 2.3	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	1.7 - 2.2	--								
			gamma-Chlordane (ug/kg)	Site	2/6 (33.3%)	2.2 - 2.3	1.9 - 6.5	N/A	--	--	--	--	Maximum Detect	7.5	0
				Background	6/6 (100%)	--	4.2 - 7.5								
			Heptachlor (ug/kg)	Site	0/6 (0.0%)	1.2 - 2.3	--	N/A	--	--	--	--	Maximum Detect	0.68	0
				Background	3/6 (50.0%)	1.8 - 1.9	0.51 - 0.68								
			Heptachlor epoxide (ug/kg)	Site	2/6 (33.3%)	2.2 - 2.3	0.63 - 0.72	N/A	--	--	--	--	Maximum Detect	3.1	0
				Background	2/6 (33.3%)	1.9 - 2.2	2.3 - 3.1								
			Methoxychlor (ug/kg)	Site	0/6 (0.0%)	12 - 23	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	17 - 22	--								
			Toxaphene (ug/kg)	Site	0/6 (0.0%)	58 - 230	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	83 - 110	--								
		SVOCs	1-Methylnaphthalene (mg/kg)	Site	5/6 (83.3%)	0.0055	0.00098 - 0.70	N/A	--	--	--	--	Maximum Detect	0.0079	3
				Background	6/6 (100%)	--	0.0038 - 0.0079								
			2-Methylnaphthalene (mg/kg)	Site	5/6 (83.3%)	0.0055	0.0013 - 1.0	N/A	--	--	--	--	Maximum Detect	0.016	2
				Background	6/6 (100%)	--	0.0065 - 0.016								
			Acenaphthene (mg/kg)	Site	5/6 (83.3%)	0.0055	0.0017 - 2.3	N/A	--	--	--	--	Maximum Detect	0.015	3
				Background	6/6 (100%)	--	0.0061 - 0.015								
			Acenaphthylene (mg/kg)	Site	6/6 (100%)	--	0.00093 - 0.28	N/A	--	--	--	--	Maximum Detect	0.083	1
				Background	6/6 (100%)	--	0.031 - 0.083								
			Anthracene (mg/kg)	Site	6/6 (100%)	--	0.0029 - 3.2	N/A	--	--	--	--	Maximum Detect	0.078	2
				Background	6/6 (100%)	--	0.026 - 0.078								
			Benzo(a)anthracene (mg/kg)	Site	6/6 (100%)	--	0.0095 - 4.0	N/A	--	--	--	--	Maximum Detect	0.23	2
				Background	6/6 (100%)	--	0.083 - 0.23								
			Benzo(a)pyrene (mg/kg)	Site	6/6 (100%)	--	0.0069 - 3.4	N/A	--	--	--	--	Maximum Detect	0.43	1
				Background	6/6 (100%)	--	0.12 - 0.43								
			Benzo(b)fluoranthene (mg/kg)	Site	6/6 (100%)	--	0.0070 - 2.8	N/A	--	--	--	--	Maximum Detect	0.41	1
				Background	6/6 (100%)	--	0.15 - 0.41								
			Benzo(g,h,i)perylene (mg/kg)	Site	6/6 (100%)	--	0.0031 - 1.2	N/A	--	--	--	--	Maximum Detect	0.38	1
				Background	6/6 (100%)	--	0.12 - 0.38								
			Benzo(k)fluoranthene (mg/kg)	Site	6/6 (100%)	--	0.0069 - 3.0	N/A	--	--	--	--	Maximum Detect	0.39	1
				Background	6/6 (100%)	--	0.10 - 0.39								
			Chrysene (mg/kg)	Site	6/6 (100%)	--	0.0085 - 3.5	N/A	--	--	--	--	Maximum Detect	0.42	2
				Background	6/6 (100%)	--	0.11 - 0.42								
			Dibenz(a,h)anthracene (mg/kg)	Site	6/6 (100%)	--	0.0012 - 0.55	N/A	--	--	--	--	Maximum Detect	0.083	1
				Background	6/6 (100%)	--	0.033 - 0.083								
			Fluoranthene (mg/kg)	Site	6/6 (100%)	--	0.021 - 11	N/A	--	--	--	--	Maximum Detect	0.52	2
				Background	6/6 (100%)	--	0.14 - 0.52								
			Fluorene (mg/kg)	Site	6/6 (100%)	--	0.00090 - 2.2	N/A	--	--	--	--	Maximum Detect	0.023	2
				Background	6/6 (100%)	--	0.010 - 0.023								
			Indeno(1,2,3-cd)pyrene (mg/kg)	Site	6/6 (100%)	--	0.0041 - 1.7	N/A	--	--	--	--	Maximum Detect	0.42	1
				Background	6/6 (100%)	--	0.13 - 0.42								
			Naphthalene (mg/kg)	Site	5/6 (83.3%)	0.0055	0.0012 - 2.1	N/A	--	--	--	--	Maximum Detect	0.026	1
				Background	6/6 (100%)	--	0.0093 - 0.026								
			Phenanthrene (mg/kg)	Site	6/6 (100%)	--	0.0099 - 14	N/A	--	--	--	--	Maximum Detect	0.11	3
				Background	6/6 (100%)	--	0.046 - 0.11								
			Pyrene (mg/kg)	Site	6/6 (100%)	--	0.017 - 8.5	N/A	--	--	--	--	Maximum Detect	0.64	2
				Background	6/6 (100%)	--	0.18 - 0.64								
			Total PAHs (mg/kg)	Site	6/6 (100%)	--	0.10 - 65	N/A	--	--	--	--	Maximum Detect	4.3	2
				Background	6/6 (100%)	--	1.3 - 4.3								
	Depth-weighted Sediment	Metals	Aluminum (mg/kg)	Site	5/5 (100%)	--	3,400 - 17,000	N/A	--	--	--	--	Normal 95% UPL(t)	21,000	0
				Background	12/12 (100%)	--	14,000 - 21,000								
			Antimony (mg/kg)	Site	1/4 (25.0%)	8.0 - 8.7	7.6	N/A	--	--	--	--	Maximum Detect	6.6	1
				Background	2/11 (18.2%)	11 - 14	5.0 - 6.6								
			Arsenic (mg/kg)	Site	5/5 (100%)	--	10 - 13	N/A	--	--	--	--	Normal 95% UPL(t)	9.5	5
				Background	12/12 (100%)	--	8.0 - 9.5								
			Barium (mg/kg)	Site	5/5 (100%)	--	180 - 940	N/A	--	--	--	--	Normal 95% UPL(t)	180	4
				Background	12/12 (100%)	--	150 - 180								

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Angler (Shoreline) (1A)	Depth-weighted Sediment	Metals	Beryllium (mg/kg)	Site	5/5 (100%)	--	0.38 - 0.86	N/A	--	--	--	--	Normal 95% UPL(t)	1.1	0
				Background	12/12 (100%)	--	0.82 - 1.1								
			Cadmium (mg/kg)	Site	5/5 (100%)	--	10 - 90	N/A	--	--	--	--	Normal 95% UPL(t)	5.3	5
				Background	12/12 (100%)	--	1.8 - 4.9								
			Calcium (mg/kg)	Site	5/5 (100%)	--	23,000 - 38,000	N/A	--	--	--	--	Normal 95% UPL(t)	31,000	1
				Background	12/12 (100%)	--	23,000 - 31,000								
			Chromium (mg/kg)	Site	5/5 (100%)	--	11 - 44	N/A	--	--	--	--	Normal 95% UPL(t)	64	0
				Background	12/12 (100%)	--	39 - 63								
			Cobalt (mg/kg)	Site	5/5 (100%)	--	4.7 - 16	N/A	--	--	--	--	Normal 95% UPL(t)	11	2
				Background	12/12 (100%)	--	8.5 - 11								
			Copper (mg/kg)	Site	5/5 (100%)	--	45 - 210	N/A	--	--	--	--	Normal 95% UPL(t)	58	4
				Background	12/12 (100%)	--	36 - 56								
			Cyanide (mg/kg)	Site	1/1 (100%)	--	0.81	N/A	--	--	--	--	--	--	1
				Background	0/1 (0.0%)	5.2	--								
			Iron (mg/kg)	Site	5/5 (100%)	--	11,000 - 27,000	N/A	--	--	--	--	Normal 95% UPL(t)	30,000	0
				Background	12/12 (100%)	--	23,000 - 30,000								
			Lead (mg/kg)	Site	5/5 (100%)	--	88 - 340	N/A	--	--	--	--	Normal 95% UPL(t)	63	5
				Background	12/12 (100%)	--	34 - 58								
			Magnesium (mg/kg)	Site	5/5 (100%)	--	9,700 - 16,000	N/A	--	--	--	--	Normal 95% UPL(t)	10,000	4
				Background	12/12 (100%)	--	8,800 - 10,000								
			Manganese (mg/kg)	Site	5/5 (100%)	--	350 - 930	N/A	--	--	--	--	Normal 95% UPL(t)	720	1
				Background	12/12 (100%)	--	540 - 710								
			Mercury (mg/kg)	Site	5/5 (100%)	--	0.16 - 1.3	N/A	--	--	--	--	Normal 95% UPL(t)	0.36	2
				Background	12/12 (100%)	--	0.16 - 0.34								
			Nickel (mg/kg)	Site	5/5 (100%)	--	13 - 36	N/A	--	--	--	--	Normal 95% UPL(t)	49	0
				Background	12/12 (100%)	--	34 - 50								
			Potassium (mg/kg)	Site	5/5 (100%)	--	450 - 2,400	N/A	--	--	--	--	Normal 95% UPL(t)	3,100	0
				Background	12/12 (100%)	--	2,000 - 3,100								
			Selenium (mg/kg)	Site	4/5 (80.0%)	4.8	2.5 - 5.4	N/A	--	--	--	--	--	--	4
				Background	0/12 (0.0%)	5.7 - 8.4	--								
			Silver (mg/kg)	Site	5/5 (100%)	--	1.3 - 2.5	N/A	--	--	--	--	WH Gamma 95% UPL	1.5	4
				Background	12/12 (100%)	--	0.30 - 1.1								
			Sodium (mg/kg)	Site	3/5 (60.0%)	780 - 1,000	430 - 480	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	850	0
				Background	5/12 (41.7%)	910 - 1,100	240 - 760								
			Thallium (mg/kg)	Site	4/5 (80.0%)	5.0	0.66 - 2.7	N/A	--	--	--	--	HW Gamma 95% UPL	3.0	0
				Background	12/12 (100%)	--	0.99 - 3.3								
			Vanadium (mg/kg)	Site	5/5 (100%)	--	14 - 33	N/A	--	--	--	--	Normal 95% UPL(t)	39	0
				Background	12/12 (100%)	--	26 - 38								
			Vanadium (mg/kg)	Site	5/5 (100%)	--	14 - 33	N/A	--	--	--	--	Normal 95% UPL(t)	37	0
			No Outliers	Background	11/11 (100%)	--	26 - 37								
			Zinc (mg/kg)	Site	5/5 (100%)	--	1,900 - 6,700	N/A	--	--	--	--	Normal 95% UPL(t)	320	5
				Background	12/12 (100%)	--	170 - 300								
		Miscellaneous	Total Organic Carbon (mg/kg)	Site	5/5 (100%)	--	21,000 - 52,000	N/A	--	--	--	--	Nonparametric 95% UPL	37,000	3
				Background	12/12 (100%)	--	20,000 - 37,000								
			Total Organic Carbon (mg/kg)	Site	5/5 (100%)	--	21,000 - 52,000	N/A	--	--	--	--	Normal 95% UPL(t)	25,000	4
			No Outliers	Background	10/10 (100%)	--	20,000 - 25,000								
		Miscellaneous-SPLP	Fluoride (mg/L)	Site	0/1 (0.0%)	0.20	--	N/A	--	--	--	--	Maximum Detect	0.29	0
				Background	1/1 (100%)	--	0.29								
		PCBs	Aroclor 1016 (mg/kg)	Site	0/1 (0.0%)	0.046	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	0.026	--								
			Aroclor 1221 (mg/kg)	Site	0/1 (0.0%)	0.092	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	0.036	--								
			Aroclor 1232 (mg/kg)	Site	0/1 (0.0%)	0.046	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	0.018	--								
			Aroclor 1242 (mg/kg)	Site	0/1 (0.0%)	0.046	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	0.018	--								
			Aroclor 1248 (mg/kg)	Site	0/1 (0.0%)	0.046	--	N/A	--	--	--	--	Maximum Detect	0.10	0
				Background	1/1 (100%)	--	0.10								
			Aroclor 1254 (mg/kg)	Site	1/1 (100%)	--	0.062	N/A	--	--	--	--	Maximum Detect	0.087	0
				Background	1/1 (100%)	--	0.087								
			Aroclor 1260 (mg/kg)	Site	0/1 (0.0%)	0.046	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	0.018	--								
			Total PCBs (mg/kg)	Site	1/1 (100%)	--	0.088	N/A	--	--	--	--	Maximum Detect	0.18	0
				Background	1/1 (100%)	--	0.18								

Table A-2
Hypothesis Testing and Background Screening Levels - Sediment
OU5 Baseline Human Health Risk Assessment
DePue Lake, DePue, Illinois

								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Angler (Shoreline) (1A)	Depth-weighted Sediment	Pesticides/Herbicides	4,4'-DDD (ug/kg)	Site	1/1 (100%)	--	10	N/A	--	--	--	--	Maximum Detect	3.3	1
				Background	1/1 (100%)	--	3.3								
			4,4'-DDE (ug/kg)	Site	1/1 (100%)	--	9.1	N/A	--	--	--	--	Maximum Detect	8.6	1
				Background	1/1 (100%)	--	8.6								
			4,4'-DDT (ug/kg)	Site	1/1 (100%)	--	4.0	N/A	--	--	--	--	Maximum Detect	5.7	0
				Background	1/1 (100%)	--	5.7								
			Aldrin (ug/kg)	Site	0/1 (0.0%)	2.4	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	1.8	--								
			Alpha-BHC (ug/kg)	Site	0/1 (0.0%)	2.4	--	N/A	--	--	--	--	Maximum Detect	2.0	0
				Background	1/1 (100%)	--	2.0								
			Alpha-Chlordane (ug/kg)	Site	1/1 (100%)	--	1.8	N/A	--	--	--	--	Maximum Detect	1.2	1
				Background	1/1 (100%)	--	1.2								
			Beta-BHC (ug/kg)	Site	0/1 (0.0%)	2.4	--	N/A	--	--	--	--	Maximum Detect	1.7	0
				Background	1/1 (100%)	--	1.7								
			delta-BHC (ug/kg)	Site	1/1 (100%)	--	0.99	N/A	--	--	--	--	--	--	1
				Background	0/1 (0.0%)	1.8	--								
			Dieldrin (ug/kg)	Site	0/1 (0.0%)	4.6	--	N/A	--	--	--	--	Maximum Detect	4.9	0
				Background	1/1 (100%)	--	4.9								
			Endosulfan I (ug/kg)	Site	0/1 (0.0%)	2.4	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	1.8	--								
			Endosulfan II (ug/kg)	Site	0/1 (0.0%)	4.6	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	3.5	--								
			Endosulfan sulfate (ug/kg)	Site	0/1 (0.0%)	4.6	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	3.5	--								
			Endrin (ug/kg)	Site	0/1 (0.0%)	4.6	--	N/A	--	--	--	--	Maximum Detect	3.1	0
				Background	1/1 (100%)	--	3.1								
			Endrin aldehyde (ug/kg)	Site	0/1 (0.0%)	4.6	--	N/A	--	--	--	--	Maximum Detect	3.1	0
				Background	1/1 (100%)	--	3.1								
			Endrin ketone (ug/kg)	Site	1/1 (100%)	--	4.0	N/A	--	--	--	--	--	--	1
				Background	0/1 (0.0%)	3.5	--								
			gamma-BHC (Lindane) (ug/kg)	Site	0/1 (0.0%)	2.4	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	1.8	--								
Angler (Shoreline) (1A)	Depth-weighted Sediment	Pesticides/Herbicides	gamma-Chlordane (ug/kg)	Site	1/1 (100%)	--	3.0	N/A	--	--	--	--	Maximum Detect	5.5	0
				Background	1/1 (100%)	--	5.5								
			Heptachlor (ug/kg)	Site	0/1 (0.0%)	2.4	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	1.8	--								
			Heptachlor epoxide (ug/kg)	Site	1/1 (100%)	--	2.2	N/A	--	--	--	--	Maximum Detect	4.2	0
				Background	1/1 (100%)	--	4.2								
			Methoxychlor (ug/kg)	Site	0/1 (0.0%)	24	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	18	--								
			Toxaphene (ug/kg)	Site	0/1 (0.0%)	240	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	88	--								
		SVOCs	1-Methylnaphthalene (mg/kg)	Site	1/1 (100%)	--	0.22	N/A	--	--	--	--	Maximum Detect	0.0057	1
				Background	1/1 (100%)	--	0.0057								
			2-Methylnaphthalene (mg/kg)	Site	1/1 (100%)	--	0.31	N/A	--	--	--	--	Maximum Detect	0.014	1
				Background	1/1 (100%)	--	0.014								
			Acenaphthene (mg/kg)	Site	1/1 (100%)	--	0.67	N/A	--	--	--	--	Maximum Detect	0.016	1
				Background	1/1 (100%)	--	0.016								
			Acenaphthylene (mg/kg)	Site	1/1 (100%)	--	0.12	N/A	--	--	--	--	Maximum Detect	0.088	1
				Background	1/1 (100%)	--	0.088								
			Anthracene (mg/kg)	Site	1/1 (100%)	--	0.99	N/A	--	--	--	--	Maximum Detect	0.086	1
				Background	1/1 (100%)	--	0.086								
			Benzo(a)anthracene (mg/kg)	Site	1/1 (100%)	--	1.4	N/A	--	--	--	--	Maximum Detect	0.21	1
				Background	1/1 (100%)	--	0.21								
			Benzo(a)pyrene (mg/kg)	Site	1/1 (100%)	--	1.2	N/A	--	--	--	--	Maximum Detect	0.23	1
				Background	1/1 (100%)	--	0.23								
			Benzo(b)fluoranthene (mg/kg)	Site	1/1 (100%)	--	1.0	N/A	--	--	--	--	Maximum Detect	0.23	1
				Background	1/1 (100%)	--	0.23								
			Benzo(g,h,i)perylene (mg/kg)	Site	1/1 (100%)	--	0.47	N/A	--	--	--	--	Maximum Detect	0.20	1
				Background	1/1 (100%)	--	0.20								
			Benzo(k)fluoranthene (mg/kg)	Site	1/1 (100%)	--	1.1	N/A	--	--	--	--	Maximum Detect	0.21	1
				Background	1/1 (100%)	--	0.21								
			Chrysene (mg/kg)	Site	1/1 (100%)	--	1.3	N/A	--	--	--	--	Maximum Detect	0.25	1
				Background	1/1 (100%)	--	0.25								
			Dibenz(a,h)anthracene (mg/kg)	Site	1/1 (100%)	--	0.20	N/A	--	--	--	--	Maximum Detect	0.062	1
				Background	1/1 (100%)	--	0.062								

Table A-2
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OU5 Baseline Human Health Risk Assessment
DePue Lake, DePue, Illinois

								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Angler (Shoreline) (1A)	Depth-weighted Sediment	SVOCs	Fluoranthene (mg/kg)	Site	1/1 (100%)	--	3.7	N/A	--	--	--	--	Maximum Detect	0.31	1
				Background	1/1 (100%)	--	0.31								
			Fluorene (mg/kg)	Site	1/1 (100%)	--	0.65	N/A	--	--	--	--	Maximum Detect	0.030	1
				Background	1/1 (100%)	--	0.030								
			Indeno(1,2,3-cd)pyrene (mg/kg)	Site	1/1 (100%)	--	0.63	N/A	--	--	--	--	Maximum Detect	0.22	1
				Background	1/1 (100%)	--	0.22								
			Naphthalene (mg/kg)	Site	1/1 (100%)	--	0.61	N/A	--	--	--	--	Maximum Detect	0.020	1
				Background	1/1 (100%)	--	0.020								
			Phenanthrene (mg/kg)	Site	1/1 (100%)	--	4.3	N/A	--	--	--	--	Maximum Detect	0.10	1
				Background	1/1 (100%)	--	0.10								
			Pyrene (mg/kg)	Site	1/1 (100%)	--	3.0	N/A	--	--	--	--	Maximum Detect	0.39	1
				Background	1/1 (100%)	--	0.39								
			Total PAHs (mg/kg)	Site	1/1 (100%)	--	22	N/A	--	--	--	--	Maximum Detect	2.7	1
				Background	1/1 (100%)	--	2.7								
Boater (Lake-wide)	Surface Sediment	Metals	Aluminum (mg/kg)	Site	83/83 (100%)	--	1,000 - 25,000	WMW Test (w/out NDs)	-1.652	-1.645	< 0.05	No	Normal 95% UPL(t)	21,000	2
				Background	12/12 (100%)	--	12,000 - 20,000								
			Antimony (mg/kg)	Site	9/44 (20.5%)	7.0 - 19	0.64 - 1.2	N/A	--	--	--	--	Maximum Detect	1.8	0
				Background	2/11 (18.2%)	11 - 17	0.86 - 1.8								
			Arsenic (mg/kg)	Site	83/83 (100%)	--	2.4 - 110	WMW Test (w/out NDs)	3.389	-1.645	1	Yes	Nonparametric 95% UPL	7.3	67
				Background	12/12 (100%)	--	4.9 - 7.3								
			Barium (mg/kg)	Site	83/83 (100%)	--	50 - 2,900	WMW Test (w/out NDs)	3.389	-1.645	1	Yes	Normal 95% UPL(t)	170	49
				Background	12/12 (100%)	--	110 - 160								
			Beryllium (mg/kg)	Site	83/83 (100%)	--	0.14 - 1.4	WMW Test (w/out NDs)	-0.0672	-1.645	0.473	Yes	Normal 95% UPL(t)	1.0	4
				Background	12/12 (100%)	--	0.63 - 1.0								
			Cadmium (mg/kg)	Site	82/83 (98.8%)	0.65	1.3 - 840	Gehan Test	5.019	-1.645	1	Yes	Normal 95% UPL(t)	2.7	78
				Background	12/12 (100%)	--	1.4 - 2.5								
			Calcium (mg/kg)	Site	83/83 (100%)	--	11,000 - 85,000	WMW Test (w/out NDs)	-0.0672	-1.645	0.473	Yes	Normal 95% UPL(t)	43,000	18
				Background	12/12 (100%)	--	31,000 - 43,000								
			Chromium (mg/kg)	Site	83/83 (100%)	--	3.3 - 79	WMW Test (w/out NDs)	1.059	-1.645	0.855	Yes	Normal 95% UPL(t)	46	21
				Background	12/12 (100%)	--	32 - 44								
			Cobalt (mg/kg)	Site	83/83 (100%)	--	1.8 - 110	WMW Test (w/out NDs)	3.624	-1.645	1	Yes	Normal 95% UPL(t)	11	62
				Background	12/12 (100%)	--	7.0 - 10								
			Copper (mg/kg)	Site	83/83 (100%)	--	10 - 6,000	WMW Test (w/out NDs)	4.638	-1.645	1	Yes	Normal 95% UPL(t)	47	73
				Background	12/12 (100%)	--	34 - 47								
			Cyanide (mg/kg)	Site	9/24 (37.5%)	0.22 - 7.0	0.36 - 1.1	N/A	--	--	--	--	--	--	9
				Background	0/6 (0.0%)	4.9 - 6.3	--								
			Iron (mg/kg)	Site	83/83 (100%)	--	4,500 - 74,000	WMW Test (w/out NDs)	0.941	-1.645	0.827	Yes	Normal 95% UPL(t)	30,000	8
				Background	12/12 (100%)	--	19,000 - 29,000								
			Lead (mg/kg)	Site	83/83 (100%)	--	8.4 - 13,000	WMW Test (w/out NDs)	4.823	-1.645	1	Yes	Normal 95% UPL(t)	44	68
				Background	12/12 (100%)	--	30 - 44								
			Magnesium (mg/kg)	Site	83/83 (100%)	--	4,300 - 33,000	WMW Test (w/out NDs)	0.745	-1.645	0.772	Yes	Normal 95% UPL(t)	12,000	19
				Background	12/12 (100%)	--	9,900 - 12,000								
Boater (Lake-wide)	Surface Sediment	Metals	Manganese (mg/kg)	Site	83/83 (100%)	--	170 - 2,800	WMW Test (w/out NDs)	1.54	-1.645	0.938	Yes	WH Gamma 95% UPL	790	40
				Background	12/12 (100%)	--	480 - 730								
			Mercury (mg/kg)	Site	70/83 (84.3%)	0.10 - 0.36	0.097 - 32	Gehan Test	2.944	-1.645	0.998	Yes	Normal 95% UPL(t)	0.26	45
				Background	12/12 (100%)	--	0.12 - 0.27								
			Nickel (mg/kg)	Site	82/83 (98.8%)	4.6	8.8 - 63	Gehan Test	0.863	-1.645	0.806	Yes	Normal 95% UPL(t)	38	12
				Background	12/12 (100%)	--	23 - 39								
			Potassium (mg/kg)	Site	83/83 (100%)	--	160 - 3,800	WMW Test (w/out NDs)	-2.291	-1.645	< 0.05	No	Normal 95% UPL(t)	3,500	1
				Background	12/12 (100%)	--	2,100 - 3,300								
			Selenium (mg/kg)	Site	44/83 (53.0%)	4.1 - 12	0.35 - 380	N/A	--	--	--	--	--	--	44
				Background	0/12 (0.0%)	6.1 - 10	--								
			Silver (mg/kg)	Site	82/83 (98.8%)	1.3	0.056 - 72	Gehan Test	4.521	-1.645	1	Yes	Nonparametric 95% UPL	0.69	69
				Background	12/12 (100%)	--	0.30 - 0.69								
			Sodium (mg/kg)	Site	31/83 (37.3%)	580 - 6,200	130 - 660	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	430	4
				Background	5/12 (41.7%)	930 - 1,200	290 - 400								
			Thallium (mg/kg)	Site	31/83 (37.3%)	3.4 - 8.7	0.36 - 2.7	Gehan Test	-2.84	-1.645	< 0.05	No	95% Kaplan-Meier UPL(t)	2.4	1
				Background	11/12 (91.7%)	6.0	0.70 - 2.4								
			Vanadium (mg/kg)	Site	83/83 (100%)	--	5.4 - 56	WMW Test (w/out NDs)	-0.616	-1.645	0.269	Yes	Normal 95% UPL(t)	37	4
				Background	12/12 (100%)	--	22 - 34								
			Zinc (mg/kg)	Site	83/83 (100%)	--	53 - 65,000	WMW Test (w/out NDs)	5.349	-1.645	1	Yes	Normal 95% UPL(t)	240	81
				Background	12/12 (100%)	--	160 - 230								

Table A-2
Hypothesis Testing and Background Screening Levels - Sediment
OU5 Baseline Human Health Risk Assessment
DePue Lake, DePue, Illinois

								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Boater (Lake-wide)	Surface Sediment	Metals-SPLP	Arsenic (mg/L)	Site	6/21 (28.6%)	0.0028 - 0.010	0.0028 - 0.014	N/A	--	--	--	--	Maximum Detect	0.0053	5
				Background	3/5 (60.0%)	0.0027 - 0.0027	0.0028 - 0.0053								
			Barium (mg/L)	Site	21/21 (100%)	--	0.019 - 0.14	N/A	--	--	--	--	Maximum Detect	0.079	2
				Background	5/5 (100%)	--	0.048 - 0.079								
			Cadmium (mg/L)	Site	9/21 (42.9%)	0.00020 - 0.0050	0.00026 - 0.015	N/A	--	--	--	--	--	--	9
				Background	0/5 (0.0%)	0.00020 - 0.00020	--								
			Chromium (mg/L)	Site	7/21 (33.3%)	0.010 - 0.010	0.00055 - 0.012	N/A	--	--	--	--	Maximum Detect	0.019	0
				Background	5/5 (100%)	--	0.0090 - 0.019								
			Lead (mg/L)	Site	11/21 (52.4%)	0.0010 - 0.0032	0.0022 - 0.13	N/A	--	--	--	--	--	--	11
				Background	0/5 (0.0%)	0.0052 - 0.015	--								
			Mercury (mg/L)	Site	0/21 (0.0%)	0.00010 - 0.00010	--	N/A	--	--	--	--	--	--	0
				Background	0/5 (0.0%)	0.00010 - 0.00010	--								
			Selenium (mg/L)	Site	1/17 (5.9%)	0.0027 - 0.0027	0.0051	N/A	--	--	--	--	--	--	1
				Background	0/5 (0.0%)	0.0029 - 0.0029	--								
			Silver (mg/L)	Site	2/21 (9.5%)	0.00070 - 0.0012	0.00073 - 0.0013	N/A	--	--	--	--	--	--	2
				Background	0/5 (0.0%)	0.00050 - 0.00050	--								
		Miscellaneous	Total Carbon (mg/kg)	Site	9/9 (100%)	--	54,000 - 130,000	N/A	--	--	--	--	Maximum Detect	63,000	6
				Background	5/5 (100%)	--	44,000 - 63,000								
			Total Organic Carbon (mg/kg)	Site	83/83 (100%)	--	2,500 - 150,000	WMW Test (w/out NDs)	2.621	-1.645	0.996	Yes	Nonparametric 95% UPL	36,000	14
				Background	12/12 (100%)	--	19,000 - 36,000								
			Total Organic Carbon (mg/kg)	Site	83/83 (100%)	--	2,500 - 150,000	WMW Test (w/out NDs)	3.076	-1.645	0.999	Yes	Nonparametric 95% UPL	33,000	20
			No Outliers	Background	11/11 (100%)	--	19,000 - 33,000								
		Miscellaneous-SPLP	Ammonia (mg/L)	Site	16/16 (100%)	--	0.089 - 4.8	N/A	--	--	--	--	Maximum Detect	2.4	2
				Background	5/5 (100%)	--	0.36 - 2.4								
			Fluoride (mg/L)	Site	17/24 (70.8%)	0.20 - 0.20	0.10 - 1.9	N/A	--	--	--	--	Maximum Detect	0.18	12
				Background	1/6 (16.7%)	0.20 - 0.20	0.18								
		PCBs	Aroclor 1016 (mg/kg)	Site	0/24 (0.0%)	0.017 - 0.073	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	0.024 - 0.031	--								
			Aroclor 1221 (mg/kg)	Site	0/24 (0.0%)	0.024 - 0.10	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	0.034 - 0.044	--								
			Aroclor 1232 (mg/kg)	Site	0/24 (0.0%)	0.012 - 0.052	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	0.017 - 0.022	--								
			Aroclor 1242 (mg/kg)	Site	0/24 (0.0%)	0.012 - 0.052	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	0.017 - 0.022	--								
			Aroclor 1248 (mg/kg)	Site	0/24 (0.0%)	0.012 - 0.052	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	0.017 - 0.022	--								
			Aroclor 1254 (mg/kg)	Site	13/24 (54.2%)	0.015 - 0.052	0.021 - 0.11	N/A	--	--	--	--	Maximum Detect	0.068	7
				Background	2/6 (33.3%)	0.017 - 0.022	0.053 - 0.068								
			Aroclor 1260 (mg/kg)	Site	2/24 (8.3%)	0.012 - 0.052	0.033 - 0.034	N/A	--	--	--	--	--	--	2
				Background	0/6 (0.0%)	0.017 - 0.022	--								
			Total PCBs (mg/kg)	Site	14/24 (58.3%)	0.030 - 0.10	0.021 - 0.12	N/A	--	--	--	--	Maximum Detect	0.068	7
				Background	2/6 (33.3%)	0.034 - 0.044	0.053 - 0.068								
		Pesticides/Herbicides	4,4'-DDD (ug/kg)	Site	10/24 (41.7%)	2.3 - 10	0.73 - 23	N/A	--	--	--	--	--	--	10
				Background	0/6 (0.0%)	2.9 - 4.2	--								
			4,4'-DDE (ug/kg)	Site	20/24 (83.3%)	3.3 - 4.4	2.2 - 15	N/A	--	--	--	--	Maximum Detect	7.2	7
				Background	6/6 (100%)	--	2.3 - 7.2								
			4,4'-DDT (ug/kg)	Site	6/24 (25.0%)	2.3 - 10	1.8 - 10	N/A	--	--	--	--	Maximum Detect	6.2	1
				Background	6/6 (100%)	--	2.7 - 6.2								
			Aldrin (ug/kg)	Site	4/24 (16.7%)	1.2 - 5.2	1.2 - 3.6	N/A	--	--	--	--	--	--	4
				Background	0/6 (0.0%)	1.7 - 2.2	--								
			Alpha-BHC (ug/kg)	Site	5/24 (20.8%)	1.2 - 3.5	0.76 - 6.7	N/A	--	--	--	--	--	--	5
				Background	0/6 (0.0%)	1.7 - 2.2	--								
			Alpha-Chlordane (ug/kg)	Site	3/24 (12.5%)	1.2 - 5.2	1.7 - 4.5	N/A	--	--	--	--	Maximum Detect	0.71	3
				Background	5/6 (83.3%)	2.0	0.46 - 0.71								
			Beta-BHC (ug/kg)	Site	13/23 (56.5%)	0.59 - 2.6	1.5 - 4.1	N/A	--	--	--	--	Maximum Detect	1.9	11
				Background	5/6 (83.3%)	0.97	0.58 - 1.9								
			delta-BHC (ug/kg)	Site	6/23 (26.1%)	1.2 - 3.5	0.85 - 17	N/A	--	--	--	--	--	--	6
				Background	0/6 (0.0%)	1.7 - 2.2	--								
			Dieldrin (ug/kg)	Site	8/24 (33.3%)	2.3 - 10	1.4 - 6.1	N/A	--	--	--	--	Maximum Detect	3.9	3
				Background	6/6 (100%)	--	2.0 - 3.9								
			Endosulfan I (ug/kg)	Site	1/24 (4.2%)	1.2 - 5.2	5.2	N/A	--	--	--	--	--	--	1
				Background	0/6 (0.0%)	1.7 - 2.2	--								
			Endosulfan II (ug/kg)	Site	1/24 (4.2%)	2.3 - 10	12	N/A	--	--	--	--	Maximum Detect	1.4	1
				Background	1/6 (16.7%)	3.3 - 4.2	1.4								
			Endosulfan sulfate (ug/kg)	Site	0/23 (0.0%)	2.3 - 10	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	3.3 - 4.2	--								

Table A-2
Hypothesis Testing and Background Screening Levels - Sediment
OU5 Baseline Human Health Risk Assessment
DePue Lake, DePue, Illinois

								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Boater (Lake-wide)	Surface Sediment	Pesticides/Herbicides	Endrin (ug/kg)	Site	2/24 (8.3%)	2.3 - 10	1.7 - 8.2	N/A	--	--	--	--	--	--	2
				Background	0/6 (0.0%)	3.3 - 4.2	--								
			Endrin aldehyde (ug/kg)	Site	8/24 (33.3%)	2.3 - 10	1.7 - 4.9	N/A	--	--	--	--	--	--	8
				Background	0/6 (0.0%)	3.3 - 4.2	--								
			Endrin ketone (ug/kg)	Site	2/24 (8.3%)	2.3 - 10	2.1 - 11	N/A	--	--	--	--	--	--	2
				Background	0/6 (0.0%)	3.3 - 4.2	--								
			gamma-BHC (Lindane) (ug/kg)	Site	3/24 (12.5%)	1.2 - 3.5	4.9 - 34	N/A	--	--	--	--	--	--	3
				Background	0/6 (0.0%)	1.7 - 2.2	--								
			gamma-Chlordane (ug/kg)	Site	14/24 (58.3%)	1.7 - 5.2	1.9 - 12	N/A	--	--	--	--	Maximum Detect	7.5	10
				Background	6/6 (100%)	--	4.2 - 7.5								
			Heptachlor (ug/kg)	Site	4/24 (16.7%)	1.2 - 5.2	1.9 - 4.8	N/A	--	--	--	--	Maximum Detect	0.68	4
				Background	3/6 (50.0%)	1.8 - 1.9	0.51 - 0.68								
			Heptachlor epoxide (ug/kg)	Site	10/24 (41.7%)	1.7 - 5.2	0.63 - 8.4	N/A	--	--	--	--	Maximum Detect	3.1	2
				Background	2/6 (33.3%)	1.9 - 2.2	2.3 - 3.1								
			Methoxychlor (ug/kg)	Site	1/24 (4.2%)	12 - 52	58	N/A	--	--	--	--	--	--	1
				Background	0/6 (0.0%)	17 - 22	--								
			Toxaphene (ug/kg)	Site	0/24 (0.0%)	58 - 250	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	83 - 110	--								
		SVOCs	1-Methylnaphthalene (mg/kg)	Site	23/24 (95.8%)	0.0055	0.00098 - 2.7	N/A	--	--	--	--	Maximum Detect	0.0079	11
				Background	6/6 (100%)	--	0.0038 - 0.0079								
			2-Methylnaphthalene (mg/kg)	Site	23/24 (95.8%)	0.0055	0.0013 - 3.4	N/A	--	--	--	--	Maximum Detect	0.016	9
				Background	6/6 (100%)	--	0.0065 - 0.016								
			Acenaphthene (mg/kg)	Site	23/24 (95.8%)	0.0055	0.0017 - 2.3	N/A	--	--	--	--	Maximum Detect	0.015	8
				Background	6/6 (100%)	--	0.0061 - 0.015								
			Acenaphthylene (mg/kg)	Site	24/24 (100%)	--	0.00093 - 0.62	N/A	--	--	--	--	Maximum Detect	0.083	2
				Background	6/6 (100%)	--	0.031 - 0.083								
			Anthracene (mg/kg)	Site	24/24 (100%)	--	0.0029 - 3.2	N/A	--	--	--	--	Maximum Detect	0.078	4
				Background	6/6 (100%)	--	0.026 - 0.078								
			Benzo(a)anthracene (mg/kg)	Site	24/24 (100%)	--	0.0095 - 4.0	N/A	--	--	--	--	Maximum Detect	0.23	5
				Background	6/6 (100%)	--	0.083 - 0.23								
			Benzo(a)pyrene (mg/kg)	Site	24/24 (100%)	--	0.0069 - 3.4	N/A	--	--	--	--	Maximum Detect	0.43	1
				Background	6/6 (100%)	--	0.12 - 0.43								
			Benzo(b)fluoranthene (mg/kg)	Site	24/24 (100%)	--	0.0070 - 2.8	N/A	--	--	--	--	Maximum Detect	0.41	2
				Background	6/6 (100%)	--	0.15 - 0.41								
			Benzo(g,h,i)perylene (mg/kg)	Site	24/24 (100%)	--	0.0031 - 1.2	N/A	--	--	--	--	Maximum Detect	0.38	1
				Background	6/6 (100%)	--	0.12 - 0.38								
			Benzo(k)fluoranthene (mg/kg)	Site	24/24 (100%)	--	0.0069 - 3.0	N/A	--	--	--	--	Maximum Detect	0.39	2
				Background	6/6 (100%)	--	0.10 - 0.39								
			Chrysene (mg/kg)	Site	24/24 (100%)	--	0.0085 - 3.5	N/A	--	--	--	--	Maximum Detect	0.42	3
				Background	6/6 (100%)	--	0.11 - 0.42								
			Dibenz(a,h)anthracene (mg/kg)	Site	24/24 (100%)	--	0.0012 - 0.55	N/A	--	--	--	--	Maximum Detect	0.083	1
				Background	6/6 (100%)	--	0.033 - 0.083								
			Fluoranthene (mg/kg)	Site	24/24 (100%)	--	0.021 - 11	N/A	--	--	--	--	Maximum Detect	0.52	5
				Background	6/6 (100%)	--	0.14 - 0.52								
			Fluorene (mg/kg)	Site	24/24 (100%)	--	0.00090 - 2.7	N/A	--	--	--	--	Maximum Detect	0.023	8
				Background	6/6 (100%)	--	0.010 - 0.023								
			Indeno(1,2,3-cd)pyrene (mg/kg)	Site	24/24 (100%)	--	0.0041 - 1.7	N/A	--	--	--	--	Maximum Detect	0.42	1
				Background	6/6 (100%)	--	0.13 - 0.42								
			Naphthalene (mg/kg)	Site	17/24 (70.8%)	0.0055 - 0.025	0.0012 - 2.8	N/A	--	--	--	--	Maximum Detect	0.026	3
				Background	6/6 (100%)	--	0.0093 - 0.026								
			Phenanthrene (mg/kg)	Site	24/24 (100%)	--	0.0099 - 14	N/A	--	--	--	--	Maximum Detect	0.11	13
				Background	6/6 (100%)	--	0.046 - 0.11								
			Pyrene (mg/kg)	Site	24/24 (100%)	--	0.017 - 8.5	N/A	--	--	--	--	Maximum Detect	0.64	3
				Background	6/6 (100%)	--	0.18 - 0.64								
			Total PAHs (mg/kg)	Site	24/24 (100%)	--	0.10 - 65	N/A	--	--	--	--	Maximum Detect	4.3	3
				Background	6/6 (100%)	--	1.3 - 4.3								
	Depth-weighted Sediment	Metals	Aluminum (mg/kg)	Site	78/78 (100%)	--	3,400 - 21,000	WMW Test (w/out NDs)	-1.027	-1.645	0.152	Yes	Normal 95% UPL(t)	21,000	0
				Background	12/12 (100%)	--	14,000 - 21,000								
			Antimony (mg/kg)	Site	7/37 (18.9%)	3.9 - 16	4.2 - 10	N/A	--	--	--	--	Maximum Detect	6.6	6
				Background	2/11 (18.2%)	11 - 14	5.0 - 6.6								
			Arsenic (mg/kg)	Site	78/78 (100%)	--	4.5 - 55	WMW Test (w/out NDs)	2.641	-1.645	0.996	Yes	Normal 95% UPL(t)	9.5	44
				Background	12/12 (100%)	--	8.0 - 9.5								
			Barium (mg/kg)	Site	78/78 (100%)	--	100 - 2,900	WMW Test (w/out NDs)	3.721	-1.645	1	Yes	Normal 95% UPL(t)	180	55
				Background	12/12 (100%)	--	150 - 180								
			Beryllium (mg/kg)	Site	78/78 (100%)	--	0.33 - 1.2	WMW Test (w/out NDs)	-0.475	-1.645	0.317	Yes	Normal 95% UPL(t)	1.1	3
				Background	12/12 (100%)	--	0.82 - 1.1								

Table A-2
Hypothesis Testing and Background Screening Levels - Sediment
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DePue Lake, DePue, Illinois

								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Boater (Lake-wide)	Depth-weighted Sediment	Metals	Cadmium (mg/kg)	Site	78/78 (100%)	--	2.8 - 770	WMW Test (w/out NDs)	5.062	-1.645	1	Yes	Normal 95% UPL(t)	5.3	70
				Background	12/12 (100%)	--	1.8 - 4.9								
			Calcium (mg/kg)	Site	78/78 (100%)	--	9,600 - 140,000	WMW Test (w/out NDs)	0.142	-1.645	0.557	Yes	Normal 95% UPL(t)	31,000	18
				Background	12/12 (100%)	--	23,000 - 31,000								
			Chromium (mg/kg)	Site	78/78 (100%)	--	11 - 76	WMW Test (w/out NDs)	-0.849	-1.645	0.198	Yes	Normal 95% UPL(t)	64	7
				Background	12/12 (100%)	--	39 - 63								
			Cobalt (mg/kg)	Site	78/78 (100%)	--	4.6 - 96	WMW Test (w/out NDs)	4.332	-1.645	1	Yes	Normal 95% UPL(t)	11	63
				Background	12/12 (100%)	--	8.5 - 11								
			Copper (mg/kg)	Site	78/78 (100%)	--	19 - 3,500	WMW Test (w/out NDs)	4.528	-1.645	1	Yes	Normal 95% UPL(t)	58	65
				Background	12/12 (100%)	--	36 - 56								
			Cyanide (mg/kg)	Site	4/4 (100%)	--	0.81 - 1.5	N/A	--	--	--	--	--	--	4
				Background	0/1 (0.0%)	5.2	--								
			Iron (mg/kg)	Site	78/78 (100%)	--	9,900 - 58,000	WMW Test (w/out NDs)	1.335	-1.645	0.909	Yes	Normal 95% UPL(t)	30,000	14
				Background	12/12 (100%)	--	23,000 - 30,000								
			Lead (mg/kg)	Site	78/78 (100%)	--	34 - 6,200	WMW Test (w/out NDs)	4.22	-1.645	1	Yes	Normal 95% UPL(t)	63	60
				Background	12/12 (100%)	--	34 - 58								
			Magnesium (mg/kg)	Site	78/78 (100%)	--	4,600 - 16,000	WMW Test (w/out NDs)	2.439	-1.645	0.993	Yes	Normal 95% UPL(t)	10,000	33
				Background	12/12 (100%)	--	8,800 - 10,000								
			Manganese (mg/kg)	Site	78/78 (100%)	--	340 - 2,500	WMW Test (w/out NDs)	1.953	-1.645	0.975	Yes	Normal 95% UPL(t)	720	35
				Background	12/12 (100%)	--	540 - 710								
			Mercury (mg/kg)	Site	74/78 (94.9%)	0.23 - 0.26	0.13 - 16	Gehan Test	2.041	-1.645	0.979	Yes	Normal 95% UPL(t)	0.36	37
				Background	12/12 (100%)	--	0.16 - 0.34								
			Nickel (mg/kg)	Site	78/78 (100%)	--	11 - 50	WMW Test (w/out NDs)	-1.964	-1.645	< 0.05	No	Normal 95% UPL(t)	49	2
				Background	12/12 (100%)	--	34 - 50								
			Potassium (mg/kg)	Site	78/78 (100%)	--	450 - 3,300	WMW Test (w/out NDs)	-0.766	-1.645	0.222	Yes	Normal 95% UPL(t)	3,100	3
				Background	12/12 (100%)	--	2,000 - 3,100								
			Selenium (mg/kg)	Site	58/78 (74.4%)	4.2 - 10	0.40 - 110	N/A	--	--	--	--	--	--	58
				Background	0/12 (0.0%)	5.7 - 8.4	--								
			Silver (mg/kg)	Site	78/78 (100%)	--	0.31 - 37	WMW Test (w/out NDs)	2.415	-1.645	0.992	Yes	WH Gamma 95% UPL	1.5	22
				Background	12/12 (100%)	--	0.30 - 1.1								
			Sodium (mg/kg)	Site	37/78 (47.4%)	600 - 1,300	210 - 3,400	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	850	4
				Background	5/12 (41.7%)	910 - 1,100	240 - 760								
			Thallium (mg/kg)	Site	43/78 (55.1%)	3.6 - 7.0	0.66 - 4.6	Gehan Test	0.0717	-1.645	0.529	Yes	HW Gamma 95% UPL	3.0	9
				Background	12/12 (100%)	--	0.99 - 3.3								
			Vanadium (mg/kg)	Site	78/78 (100%)	--	13 - 43	WMW Test (w/out NDs)	-0.196	-1.645	0.422	Yes	Normal 95% UPL(t)	39	5
				Background	12/12 (100%)	--	26 - 38								
			Vanadium (mg/kg)	Site	78/78 (100%)	--	13 - 43	WMW Test (w/out NDs)	0.206	-1.645	0.581	Yes	Normal 95% UPL(t)	37	9
			No Outliers	Background	11/11 (100%)	--	26 - 37								
			Zinc (mg/kg)	Site	78/78 (100%)	--	450 - 39,000	WMW Test (w/out NDs)	5.561	-1.645	1	Yes	Normal 95% UPL(t)	320	78
				Background	12/12 (100%)	--	170 - 300								
		Miscellaneous	Total Organic Carbon (mg/kg)	Site	78/78 (100%)	--	11,000 - 120,000	WMW Test (w/out NDs)	2.884	-1.645	0.998	Yes	Nonparametric 95% UPL	37,000	10
				Background	12/12 (100%)	--	20,000 - 37,000								
			Total Organic Carbon (mg/kg)	Site	78/78 (100%)	--	11,000 - 120,000	WMW Test (w/out NDs)	3.931	-1.645	1	Yes	Normal 95% UPL(t)	25,000	56
			No Outliers	Background	10/10 (100%)	--	20,000 - 25,000								
		Miscellaneous-SPLP	Fluoride (mg/L)	Site	3/4 (75.0%)	0.20	0.28 - 9.1	N/A	--	--	--	--	Maximum Detect	0.29	2
				Background	1/1 (100%)	--	0.29								
		PCBs	Aroclor 1016 (mg/kg)	Site	0/4 (0.0%)	0.040 - 0.062	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	0.026	--								
			Aroclor 1221 (mg/kg)	Site	0/4 (0.0%)	0.058 - 0.092	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	0.036	--								
			Aroclor 1232 (mg/kg)	Site	0/4 (0.0%)	0.028 - 0.046	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	0.018	--								
			Aroclor 1242 (mg/kg)	Site	0/4 (0.0%)	0.028 - 0.046	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	0.018	--								
			Aroclor 1248 (mg/kg)	Site	1/4 (25.0%)	0.028 - 0.046	0.081	N/A	--	--	--	--	Maximum Detect	0.10	0
				Background	1/1 (100%)	--	0.10								
			Aroclor 1254 (mg/kg)	Site	4/4 (100%)	--	0.025 - 0.062	N/A	--	--	--	--	Maximum Detect	0.087	0
				Background	1/1 (100%)	--	0.087								
			Aroclor 1260 (mg/kg)	Site	1/4 (25.0%)	0.028 - 0.046	0.032	N/A	--	--	--	--	--	--	1
				Background	0/1 (0.0%)	0.018	--								
			Total PCBs (mg/kg)	Site	4/4 (100%)	--	0.040 - 0.13	N/A	--	--	--	--	Maximum Detect	0.18	0
				Background	1/1 (100%)	--	0.18								

Table A-2
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DePue Lake, DePue, Illinois

								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Boater (Lake-wide)	Depth-weighted Sediment	Pesticides/Herbicides	4,4'-DDD (ug/kg)	Site	3/4 (75.0%)	6.6	3.1 - 10	N/A	--	--	--	--	Maximum Detect	3.3	2
				Background	1/1 (100%)	--	3.3								
			4,4'-DDE (ug/kg)	Site	4/4 (100%)	--	2.5 - 9.1	N/A	--	--	--	--	Maximum Detect	8.6	1
				Background	1/1 (100%)	--	8.6								
			4,4'-DDT (ug/kg)	Site	4/4 (100%)	--	4.0 - 6.0	N/A	--	--	--	--	Maximum Detect	5.7	1
				Background	1/1 (100%)	--	5.7								
			Aldrin (ug/kg)	Site	2/4 (50.0%)	2.4 - 2.8	1.6 - 4.3	N/A	--	--	--	--	--	--	2
				Background	0/1 (0.0%)	1.8	--								
			Alpha-BHC (ug/kg)	Site	3/4 (75.0%)	2.4	0.68 - 6.1	N/A	--	--	--	--	Maximum Detect	2.0	2
				Background	1/1 (100%)	--	2.0								
			Alpha-Chlordane (ug/kg)	Site	2/4 (50.0%)	3.4 - 4.4	1.8 - 2.7	N/A	--	--	--	--	Maximum Detect	1.2	2
				Background	1/1 (100%)	--	1.2								
			Beta-BHC (ug/kg)	Site	3/4 (75.0%)	2.4	1.5 - 2.7	N/A	--	--	--	--	Maximum Detect	1.7	2
				Background	1/1 (100%)	--	1.7								
			delta-BHC (ug/kg)	Site	3/4 (75.0%)	3.4	0.99 - 13	N/A	--	--	--	--	--	--	3
				Background	0/1 (0.0%)	1.8	--								
			Dieldrin (ug/kg)	Site	3/4 (75.0%)	4.6	3.4 - 9.1	N/A	--	--	--	--	Maximum Detect	4.9	2
				Background	1/1 (100%)	--	4.9								
			Endosulfan I (ug/kg)	Site	0/4 (0.0%)	2.4 - 4.4	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	1.8	--								
			Endosulfan II (ug/kg)	Site	0/4 (0.0%)	4.6 - 8.4	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	3.5	--								
			Endosulfan sulfate (ug/kg)	Site	0/4 (0.0%)	4.6 - 8.4	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	3.5	--								
			Endrin (ug/kg)	Site	0/4 (0.0%)	4.6 - 8.4	--	N/A	--	--	--	--	Maximum Detect	3.1	0
				Background	1/1 (100%)	--	3.1								
			Endrin aldehyde (ug/kg)	Site	0/4 (0.0%)	4.6 - 8.4	--	N/A	--	--	--	--	Maximum Detect	3.1	0
				Background	1/1 (100%)	--	3.1								
			Endrin ketone (ug/kg)	Site	1/4 (25.0%)	5.6 - 8.4	4.0	N/A	--	--	--	--	--	--	1
				Background	0/1 (0.0%)	3.5	--								
			gamma-BHC (Lindane) (ug/kg)	Site	2/4 (50.0%)	2.4 - 3.4	2.8 - 20	N/A	--	--	--	--	--	--	2
				Background	0/1 (0.0%)	1.8	--								
			gamma-Chlordane (ug/kg)	Site	4/4 (100%)	--	1.3 - 6.4	N/A	--	--	--	--	Maximum Detect	5.5	1
				Background	1/1 (100%)	--	5.5								
			Heptachlor (ug/kg)	Site	3/4 (75.0%)	2.4	1.3 - 6.6	N/A	--	--	--	--	--	--	3
				Background	0/1 (0.0%)	1.8	--								
			Heptachlor epoxide (ug/kg)	Site	1/4 (25.0%)	2.8 - 4.4	2.2	N/A	--	--	--	--	Maximum Detect	4.2	0
				Background	1/1 (100%)	--	4.2								
			Methoxychlor (ug/kg)	Site	0/4 (0.0%)	24 - 44	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	18	--								
			Toxaphene (ug/kg)	Site	0/4 (0.0%)	140 - 240	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	88	--								
		SVOCs	1-Methylnaphthalene (mg/kg)	Site	4/4 (100%)	--	0.0032 - 0.22	N/A	--	--	--	--	Maximum Detect	0.0057	3
				Background	1/1 (100%)	--	0.0057								
			2-Methylnaphthalene (mg/kg)	Site	4/4 (100%)	--	0.0054 - 0.31	N/A	--	--	--	--	Maximum Detect	0.014	2
				Background	1/1 (100%)	--	0.014								
			Acenaphthene (mg/kg)	Site	4/4 (100%)	--	0.011 - 0.67	N/A	--	--	--	--	Maximum Detect	0.016	1
				Background	1/1 (100%)	--	0.016								
			Acenaphthylene (mg/kg)	Site	4/4 (100%)	--	0.013 - 0.12	N/A	--	--	--	--	Maximum Detect	0.088	1
				Background	1/1 (100%)	--	0.088								
			Anthracene (mg/kg)	Site	4/4 (100%)	--	0.027 - 0.99	N/A	--	--	--	--	Maximum Detect	0.086	1
				Background	1/1 (100%)	--	0.086								
			Benzo(a)anthracene (mg/kg)	Site	4/4 (100%)	--	0.082 - 1.4	N/A	--	--	--	--	Maximum Detect	0.21	1
				Background	1/1 (100%)	--	0.21								
			Benzo(a)pyrene (mg/kg)	Site	4/4 (100%)	--	0.072 - 1.2	N/A	--	--	--	--	Maximum Detect	0.23	1
				Background	1/1 (100%)	--	0.23								
			Benzo(b)fluoranthene (mg/kg)	Site	4/4 (100%)	--	0.078 - 1.0	N/A	--	--	--	--	Maximum Detect	0.23	1
				Background	1/1 (100%)	--	0.23								
			Benzo(g,h,i)perylene (mg/kg)	Site	4/4 (100%)	--	0.056 - 0.47	N/A	--	--	--	--	Maximum Detect	0.20	1
				Background	1/1 (100%)	--	0.20								
			Benzo(k)fluoranthene (mg/kg)	Site	4/4 (100%)	--	0.061 - 1.1	N/A	--	--	--	--	Maximum Detect	0.21	1
				Background	1/1 (100%)	--	0.21								
			Chrysene (mg/kg)	Site	4/4 (100%)	--	0.10 - 1.3	N/A	--	--	--	--	Maximum Detect	0.25	1
				Background	1/1 (100%)	--	0.25								
			Dibenz(a,h)anthracene (mg/kg)	Site	4/4 (100%)	--	0.018 - 0.20	N/A	--	--	--	--	Maximum Detect	0.062	1
				Background	1/1 (100%)	--	0.062								

Table A-2
Hypothesis Testing and Background Screening Levels - Sediment
OU5 Baseline Human Health Risk Assessment
DePue Lake, DePue, Illinois

								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Boater (Lake-wide)	Depth-weighted Sediment	SVOCs	Fluoranthene (mg/kg)	Site	4/4 (100%)	--	0.18 - 3.7	N/A	--	--	--	--	Maximum Detect	0.31	2
				Background	1/1 (100%)	--	0.31								
			Fluorene (mg/kg)	Site	4/4 (100%)	--	0.014 - 0.65	N/A	--	--	--	--	Maximum Detect	0.030	2
				Background	1/1 (100%)	--	0.030								
			Indeno(1,2,3-cd)pyrene (mg/kg)	Site	4/4 (100%)	--	0.054 - 0.63	N/A	--	--	--	--	Maximum Detect	0.22	1
				Background	1/1 (100%)	--	0.22								
			Naphthalene (mg/kg)	Site	2/4 (50.0%)	0.014 - 0.021	0.018 - 0.61	N/A	--	--	--	--	Maximum Detect	0.020	1
				Background	1/1 (100%)	--	0.020								
			Phenanthrene (mg/kg)	Site	4/4 (100%)	--	0.074 - 4.3	N/A	--	--	--	--	Maximum Detect	0.10	3
				Background	1/1 (100%)	--	0.10								
			Pyrene (mg/kg)	Site	4/4 (100%)	--	0.19 - 3.0	N/A	--	--	--	--	Maximum Detect	0.39	1
				Background	1/1 (100%)	--	0.39								
			Total PAHs (mg/kg)	Site	4/4 (100%)	--	1.0 - 22	N/A	--	--	--	--	Maximum Detect	2.7	1
				Background	1/1 (100%)	--	2.7								
Utility Maintenance Worker (1B)	Surface Sediment	Metals	Aluminum (mg/kg)	Site	3/3 (100%)	--	7,700 - 15,000	N/A	--	--	--	--	Normal 95% UPL(t)	21,000	0
				Background	12/12 (100%)	--	12,000 - 20,000								
			Antimony (mg/kg)	Site	0/2 (0.0%)	9.3 - 15	--	N/A	--	--	--	--	Maximum Detect	1.8	0
				Background	2/11 (18.2%)	11 - 17	0.86 - 1.8								
			Arsenic (mg/kg)	Site	3/3 (100%)	--	30 - 110	N/A	--	--	--	--	Nonparametric 95% UPL	7.3	3
				Background	12/12 (100%)	--	4.9 - 7.3								
			Barium (mg/kg)	Site	3/3 (100%)	--	620 - 2,900	N/A	--	--	--	--	Normal 95% UPL(t)	170	3
				Background	12/12 (100%)	--	110 - 160								
			Beryllium (mg/kg)	Site	3/3 (100%)	--	0.83 - 0.99	N/A	--	--	--	--	Normal 95% UPL(t)	1.0	0
				Background	12/12 (100%)	--	0.63 - 1.0								
Utility Maintenance Worker (1B)	Surface Sediment	Metals	Cadmium (mg/kg)	Site	3/3 (100%)	--	210 - 840	N/A	--	--	--	--	Normal 95% UPL(t)	2.7	3
				Background	12/12 (100%)	--	1.4 - 2.5								
			Calcium (mg/kg)	Site	3/3 (100%)	--	23,000 - 85,000	N/A	--	--	--	--	Normal 95% UPL(t)	43,000	1
				Background	12/12 (100%)	--	31,000 - 43,000								
			Chromium (mg/kg)	Site	3/3 (100%)	--	22 - 79	N/A	--	--	--	--	Normal 95% UPL(t)	46	1
				Background	12/12 (100%)	--	32 - 44								
			Cobalt (mg/kg)	Site	3/3 (100%)	--	11 - 110	N/A	--	--	--	--	Normal 95% UPL(t)	11	3
				Background	12/12 (100%)	--	7.0 - 10								
			Copper (mg/kg)	Site	3/3 (100%)	--	280 - 6,000	N/A	--	--	--	--	Normal 95% UPL(t)	47	3
				Background	12/12 (100%)	--	34 - 47								
			Cyanide (mg/kg)	Site	1/1 (100%)	--	0.58	N/A	--	--	--	--	--	--	1
				Background	0/6 (0.0%)	4.9 - 6.3	--								
			Iron (mg/kg)	Site	3/3 (100%)	--	24,000 - 74,000	N/A	--	--	--	--	Normal 95% UPL(t)	30,000	2
				Background	12/12 (100%)	--	19,000 - 29,000								
			Lead (mg/kg)	Site	3/3 (100%)	--	1,300 - 13,000	N/A	--	--	--	--	Normal 95% UPL(t)	44	3
				Background	12/12 (100%)	--	30 - 44								
			Magnesium (mg/kg)	Site	3/3 (100%)	--	4,600 - 8,800	N/A	--	--	--	--	Normal 95% UPL(t)	12,000	0
				Background	12/12 (100%)	--	9,900 - 12,000								
			Manganese (mg/kg)	Site	3/3 (100%)	--	670 - 2,800	N/A	--	--	--	--	WH Gamma 95% UPL	790	2
				Background	12/12 (100%)	--	480 - 730								
			Mercury (mg/kg)	Site	3/3 (100%)	--	2.6 - 32	N/A	--	--	--	--	Normal 95% UPL(t)	0.26	3
				Background	12/12 (100%)	--	0.12 - 0.27								
			Nickel (mg/kg)	Site	3/3 (100%)	--	20 - 55	N/A	--	--	--	--	Normal 95% UPL(t)	38	1
				Background	12/12 (100%)	--	23 - 39								
			Potassium (mg/kg)	Site	3/3 (100%)	--	910 - 1,900	N/A	--	--	--	--	Normal 95% UPL(t)	3,500	0
				Background	12/12 (100%)	--	2,100 - 3,300								
			Selenium (mg/kg)	Site	3/3 (100%)	--	7.1 - 380	N/A	--	--	--	--	--	--	3
				Background	0/12 (0.0%)	6.1 - 10	--								
			Silver (mg/kg)	Site	3/3 (100%)	--	5.7 - 72	N/A	--	--	--	--	Nonparametric 95% UPL	0.69	3
				Background	12/12 (100%)	--	0.30 - 0.69								
			Sodium (mg/kg)	Site	1/3 (33.3%)	2,300 - 6,200	370	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	430	0
				Background	5/12 (41.7%)	930 - 1,200	290 - 400								
			Thallium (mg/kg)	Site	2/3 (66.7%)	5.7	2.1 - 2.7	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	2.4	1
				Background	11/12 (91.7%)	6.0	0.70 - 2.4								
			Vanadium (mg/kg)	Site	3/3 (100%)	--	22 - 32	N/A	--	--	--	--	Normal 95% UPL(t)	37	0
				Background	12/12 (100%)	--	22 - 34								
			Zinc (mg/kg)	Site	3/3 (100%)	--	10,000 - 65,000	N/A	--	--	--	--	Normal 95% UPL(t)	240	3
				Background	12/12 (100%)	--	160 - 230								

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								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Utility Maintenance Worker (1B)	Surface Sediment	Metals-SPLP	Arsenic (mg/L)	Site	0/1 (0.0%)	0.010	--	N/A	--	--	--	--	Maximum Detect	0.0053	0
				Background	3/5 (60.0%)	0.0027 - 0.0027	0.0028 - 0.0053								
			Barium (mg/L)	Site	1/1 (100%)	--	0.14	N/A	--	--	--	--	Maximum Detect	0.079	1
				Background	5/5 (100%)	--	0.048 - 0.079								
			Cadmium (mg/L)	Site	1/1 (100%)	--	0.0020	N/A	--	--	--	--	--	--	1
				Background	0/5 (0.0%)	0.00020 - 0.00020	--								
			Chromium (mg/L)	Site	1/1 (100%)	--	0.00055	N/A	--	--	--	--	Maximum Detect	0.019	0
				Background	5/5 (100%)	--	0.0090 - 0.019								
			Lead (mg/L)	Site	1/1 (100%)	--	0.045	N/A	--	--	--	--	--	--	1
				Background	0/5 (0.0%)	0.0052 - 0.015	--								
			Mercury (mg/L)	Site	0/1 (0.0%)	0.00010	--	N/A	--	--	--	--	--	--	0
				Background	0/5 (0.0%)	0.00010 - 0.00010	--								
			Selenium (mg/L)	Site	0/1 (0.0%)	0.0027	--	N/A	--	--	--	--	--	--	0
				Background	0/5 (0.0%)	0.0029 - 0.0029	--								
			Silver (mg/L)	Site	0/1 (0.0%)	0.0012	--	N/A	--	--	--	--	--	--	0
				Background	0/5 (0.0%)	0.00050 - 0.00050	--								
		Miscellaneous	Total Carbon (mg/kg)	Site	1/1 (100%)	--	130,000	N/A	--	--	--	--	Maximum Detect	63,000	1
				Background	5/5 (100%)	--	44,000 - 63,000								
			Total Organic Carbon (mg/kg)	Site	3/3 (100%)	--	39,000 - 150,000	N/A	--	--	--	--	Nonparametric 95% UPL	36,000	3
				Background	12/12 (100%)	--	19,000 - 36,000								
			Total Organic Carbon (mg/kg)	Site	3/3 (100%)	--	39,000 - 150,000	N/A	--	--	--	--	Nonparametric 95% UPL	33,000	3
			No Outliers	Background	11/11 (100%)	--	19,000 - 33,000								
		Miscellaneous-SPLP	Ammonia (mg/L)	Site	1/1 (100%)	--	1.1	N/A	--	--	--	--	Maximum Detect	2.4	0
				Background	5/5 (100%)	--	0.36 - 2.4								
			Fluoride (mg/L)	Site	1/1 (100%)	--	0.32	N/A	--	--	--	--	Maximum Detect	0.18	1
				Background	1/6 (16.7%)	0.20 - 0.20	0.18								
		PCBs	Aroclor 1016 (mg/kg)	Site	0/1 (0.0%)	0.032	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	0.024 - 0.031	--								
			Aroclor 1221 (mg/kg)	Site	0/1 (0.0%)	0.046	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	0.034 - 0.044	--								
			Aroclor 1232 (mg/kg)	Site	0/1 (0.0%)	0.023	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	0.017 - 0.022	--								
			Aroclor 1242 (mg/kg)	Site	0/1 (0.0%)	0.023	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	0.017 - 0.022	--								
			Aroclor 1248 (mg/kg)	Site	0/1 (0.0%)	0.023	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	0.017 - 0.022	--								
			Aroclor 1254 (mg/kg)	Site	0/1 (0.0%)	0.023	--	N/A	--	--	--	--	Maximum Detect	0.068	0
				Background	2/6 (33.3%)	0.017 - 0.022	0.053 - 0.068								
		PCBs	Aroclor 1260 (mg/kg)	Site	0/1 (0.0%)	0.023	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	0.017 - 0.022	--								
			Total PCBs (mg/kg)	Site	0/1 (0.0%)	0.046	--	N/A	--	--	--	--	Maximum Detect	0.068	0
				Background	2/6 (33.3%)	0.034 - 0.044	0.053 - 0.068								
		Pesticides/Herbicides	4,4'-DDD (ug/kg)	Site	0/1 (0.0%)	4.5	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	2.9 - 4.2	--								
			4,4'-DDE (ug/kg)	Site	1/1 (100%)	--	11	N/A	--	--	--	--	Maximum Detect	7.2	1
				Background	6/6 (100%)	--	2.3 - 7.2								
			4,4'-DDT (ug/kg)	Site	1/1 (100%)	--	10	N/A	--	--	--	--	Maximum Detect	6.2	1
				Background	6/6 (100%)	--	2.7 - 6.2								
			Aldrin (ug/kg)	Site	0/1 (0.0%)	2.3	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	1.7 - 2.2	--								
			Alpha-BHC (ug/kg)	Site	0/1 (0.0%)	2.3	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	1.7 - 2.2	--								
			Alpha-Chlordane (ug/kg)	Site	0/1 (0.0%)	2.3	--	N/A	--	--	--	--	Maximum Detect	0.71	0
				Background	5/6 (83.3%)	2.0	0.46 - 0.71								
			Beta-BHC (ug/kg)	Site	1/1 (100%)	--	3.4	N/A	--	--	--	--	Maximum Detect	1.9	1
				Background	5/6 (83.3%)	0.97	0.58 - 1.9								
			delta-BHC (ug/kg)	Site	1/1 (100%)	--	14	N/A	--	--	--	--	--	--	1
				Background	0/6 (0.0%)	1.7 - 2.2	--								
			Dieldrin (ug/kg)	Site	1/1 (100%)	--	5.1	N/A	--	--	--	--	Maximum Detect	3.9	1
				Background	6/6 (100%)	--	2.0 - 3.9								
			Endosulfan I (ug/kg)	Site	1/1 (100%)	--	5.2	N/A	--	--	--	--	--	--	1
				Background	0/6 (0.0%)	1.7 - 2.2	--								
			Endosulfan II (ug/kg)	Site	1/1 (100%)	--	12	N/A	--	--	--	--	Maximum Detect	1.4	1
				Background	1/6 (16.7%)	3.3 - 4.2	1.4								
			Endosulfan sulfate (ug/kg)	Site	0/1 (0.0%)	4.5	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	3.3 - 4.2	--								

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								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Utility Maintenance Worker (1B)	Surface Sediment	Pesticides/Herbicides	Endrin (ug/kg)	Site	1/1 (100%)	--	8.2	N/A	--	--	--	--	--	--	1
				Background	0/6 (0.0%)	3.3 - 4.2	--								
			Endrin aldehyde (ug/kg)	Site	0/1 (0.0%)	4.5	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	3.3 - 4.2	--								
			Endrin ketone (ug/kg)	Site	1/1 (100%)	--	11	N/A	--	--	--	--	--	--	1
				Background	0/6 (0.0%)	3.3 - 4.2	--								
			gamma-BHC (Lindane) (ug/kg)	Site	1/1 (100%)	--	4.9	N/A	--	--	--	--	--	--	1
				Background	0/6 (0.0%)	1.7 - 2.2	--								
			gamma-Chlordane (ug/kg)	Site	0/1 (0.0%)	2.3	--	N/A	--	--	--	--	Maximum Detect	7.5	0
				Background	6/6 (100%)	--	4.2 - 7.5								
			Heptachlor (ug/kg)	Site	1/1 (100%)	--	4.8	N/A	--	--	--	--	Maximum Detect	0.68	1
				Background	3/6 (50.0%)	1.8 - 1.9	0.51 - 0.68								
			Heptachlor epoxide (ug/kg)	Site	1/1 (100%)	--	8.4	N/A	--	--	--	--	Maximum Detect	3.1	1
				Background	2/6 (33.3%)	1.9 - 2.2	2.3 - 3.1								
			Methoxychlor (ug/kg)	Site	1/1 (100%)	--	58	N/A	--	--	--	--	--	--	1
				Background	0/6 (0.0%)	17 - 22	--								
			Toxaphene (ug/kg)	Site	0/1 (0.0%)	110	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	83 - 110	--								
		SVOCs	1-Methylnaphthalene (mg/kg)	Site	1/1 (100%)	--	2.7	N/A	--	--	--	--	Maximum Detect	0.0079	1
				Background	6/6 (100%)	--	0.0038 - 0.0079								
			2-Methylnaphthalene (mg/kg)	Site	1/1 (100%)	--	3.4	N/A	--	--	--	--	Maximum Detect	0.016	1
				Background	6/6 (100%)	--	0.0065 - 0.016								
			Acenaphthene (mg/kg)	Site	1/1 (100%)	--	0.77	N/A	--	--	--	--	Maximum Detect	0.015	1
				Background	6/6 (100%)	--	0.0061 - 0.015								
			Acenaphthylene (mg/kg)	Site	1/1 (100%)	--	0.62	N/A	--	--	--	--	Maximum Detect	0.083	1
				Background	6/6 (100%)	--	0.031 - 0.083								
			Anthracene (mg/kg)	Site	1/1 (100%)	--	1.1	N/A	--	--	--	--	Maximum Detect	0.078	1
				Background	6/6 (100%)	--	0.026 - 0.078								
			Benzo(a)anthracene (mg/kg)	Site	1/1 (100%)	--	0.39	N/A	--	--	--	--	Maximum Detect	0.23	1
				Background	6/6 (100%)	--	0.083 - 0.23								
			Benzo(a)pyrene (mg/kg)	Site	1/1 (100%)	--	0.17	N/A	--	--	--	--	Maximum Detect	0.43	0
				Background	6/6 (100%)	--	0.12 - 0.43								
			Benzo(b)fluoranthene (mg/kg)	Site	1/1 (100%)	--	0.30	N/A	--	--	--	--	Maximum Detect	0.41	0
				Background	6/6 (100%)	--	0.15 - 0.41								
			Benzo(g,h,i)perylene (mg/kg)	Site	1/1 (100%)	--	0.046	N/A	--	--	--	--	Maximum Detect	0.38	0
				Background	6/6 (100%)	--	0.12 - 0.38								
			Benzo(k)fluoranthene (mg/kg)	Site	1/1 (100%)	--	0.16	N/A	--	--	--	--	Maximum Detect	0.39	0
				Background	6/6 (100%)	--	0.10 - 0.39								
			Chrysene (mg/kg)	Site	1/1 (100%)	--	0.56	N/A	--	--	--	--	Maximum Detect	0.42	1
				Background	6/6 (100%)	--	0.11 - 0.42								
			Dibenz(a,h)anthracene (mg/kg)	Site	1/1 (100%)	--	0.028	N/A	--	--	--	--	Maximum Detect	0.083	0
				Background	6/6 (100%)	--	0.033 - 0.083								
			Fluoranthene (mg/kg)	Site	1/1 (100%)	--	1.2	N/A	--	--	--	--	Maximum Detect	0.52	1
				Background	6/6 (100%)	--	0.14 - 0.52								
			Fluorene (mg/kg)	Site	1/1 (100%)	--	2.7	N/A	--	--	--	--	Maximum Detect	0.023	1
				Background	6/6 (100%)	--	0.010 - 0.023								
			Indeno(1,2,3-cd)pyrene (mg/kg)	Site	1/1 (100%)	--	0.048	N/A	--	--	--	--	Maximum Detect	0.42	0
				Background	6/6 (100%)	--	0.13 - 0.42								
			Naphthalene (mg/kg)	Site	1/1 (100%)	--	2.8	N/A	--	--	--	--	Maximum Detect	0.026	1
				Background	6/6 (100%)	--	0.0093 - 0.026								
			Phenanthrene (mg/kg)	Site	1/1 (100%)	--	5.2	N/A	--	--	--	--	Maximum Detect	0.11	1
				Background	6/6 (100%)	--	0.046 - 0.11								
			Pyrene (mg/kg)	Site	1/1 (100%)	--	0.95	N/A	--	--	--	--	Maximum Detect	0.64	1
				Background	6/6 (100%)	--	0.18 - 0.64								
			Total PAHs (mg/kg)	Site	1/1 (100%)	--	23	N/A	--	--	--	--	Maximum Detect	4.3	1
				Background	6/6 (100%)	--	1.3 - 4.3								
	Depth-weighted Sediment	Metals	Aluminum (mg/kg)	Site	3/3 (100%)	--	7,100 - 16,000	N/A	--	--	--	--	Normal 95% UPL(t)	21,000	0
				Background	12/12 (100%)	--	14,000 - 21,000								
			Antimony (mg/kg)	Site	0/1 (0.0%)	13	--	N/A	--	--	--	--	Maximum Detect	6.6	0
				Background	2/11 (18.2%)	11 - 14	5.0 - 6.6								
			Arsenic (mg/kg)	Site	3/3 (100%)	--	12 - 55	N/A	--	--	--	--	Normal 95% UPL(t)	9.5	3
				Background	12/12 (100%)	--	8.0 - 9.5								
			Barium (mg/kg)	Site	3/3 (100%)	--	710 - 2,900	N/A	--	--	--	--	Normal 95% UPL(t)	180	3
				Background	12/12 (100%)	--	150 - 180								
			Beryllium (mg/kg)	Site	3/3 (100%)	--	0.62 - 1.0	N/A	--	--	--	--	Normal 95% UPL(t)	1.1	0
				Background	12/12 (100%)	--	0.82 - 1.1								

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Hypothesis Testing and Background Screening Levels - Sediment
OU5 Baseline Human Health Risk Assessment
DePue Lake, DePue, Illinois

								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Utility Maintenance Worker (1B)	Depth-weighted Sediment	Metals	Cadmium (mg/kg)	Site	3/3 (100%)	--	74 - 770	N/A	--	--	--	--	Normal 95% UPL(t)	5.3	3
				Background	12/12 (100%)	--	1.8 - 4.9								
			Calcium (mg/kg)	Site	3/3 (100%)	--	23,000 - 140,000	N/A	--	--	--	--	Normal 95% UPL(t)	31,000	2
				Background	12/12 (100%)	--	23,000 - 31,000								
			Chromium (mg/kg)	Site	3/3 (100%)	--	16 - 73	N/A	--	--	--	--	Normal 95% UPL(t)	64	1
				Background	12/12 (100%)	--	39 - 63								
			Cobalt (mg/kg)	Site	3/3 (100%)	--	6.2 - 96	N/A	--	--	--	--	Normal 95% UPL(t)	11	2
				Background	12/12 (100%)	--	8.5 - 11								
			Copper (mg/kg)	Site	3/3 (100%)	--	110 - 3,500	N/A	--	--	--	--	Normal 95% UPL(t)	58	3
				Background	12/12 (100%)	--	36 - 56								
			Iron (mg/kg)	Site	3/3 (100%)	--	32,000 - 58,000	N/A	--	--	--	--	Normal 95% UPL(t)	30,000	3
				Background	12/12 (100%)	--	23,000 - 30,000								
			Lead (mg/kg)	Site	3/3 (100%)	--	1,000 - 6,200	N/A	--	--	--	--	Normal 95% UPL(t)	63	3
				Background	12/12 (100%)	--	34 - 58								
			Magnesium (mg/kg)	Site	3/3 (100%)	--	6,900 - 8,300	N/A	--	--	--	--	Normal 95% UPL(t)	10,000	0
				Background	12/12 (100%)	--	8,800 - 10,000								
			Manganese (mg/kg)	Site	3/3 (100%)	--	840 - 2,500	N/A	--	--	--	--	Normal 95% UPL(t)	720	3
				Background	12/12 (100%)	--	540 - 710								
			Mercury (mg/kg)	Site	3/3 (100%)	--	2.0 - 16	N/A	--	--	--	--	Normal 95% UPL(t)	0.36	3
				Background	12/12 (100%)	--	0.16 - 0.34								
			Nickel (mg/kg)	Site	3/3 (100%)	--	15 - 48	N/A	--	--	--	--	Normal 95% UPL(t)	49	0
				Background	12/12 (100%)	--	34 - 50								
			Potassium (mg/kg)	Site	3/3 (100%)	--	810 - 2,100	N/A	--	--	--	--	Normal 95% UPL(t)	3,100	0
				Background	12/12 (100%)	--	2,000 - 3,100								
			Selenium (mg/kg)	Site	3/3 (100%)	--	8.8 - 110	N/A	--	--	--	--	--	--	3
				Background	0/12 (0.0%)	5.7 - 8.4	--								
			Silver (mg/kg)	Site	3/3 (100%)	--	3.2 - 37	N/A	--	--	--	--	WH Gamma 95% UPL	1.5	3
				Background	12/12 (100%)	--	0.30 - 1.1								
			Sodium (mg/kg)	Site	3/3 (100%)	--	320 - 3,400	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	850	1
				Background	5/12 (41.7%)	910 - 1,100	240 - 760								
			Thallium (mg/kg)	Site	2/3 (66.7%)	5.7	2.1 - 2.6	N/A	--	--	--	--	HW Gamma 95% UPL	3.0	0
				Background	12/12 (100%)	--	0.99 - 3.3								
			Vanadium (mg/kg)	Site	3/3 (100%)	--	18 - 34	N/A	--	--	--	--	Normal 95% UPL(t)	39	0
				Background	12/12 (100%)	--	26 - 38								
			Vanadium (mg/kg)	Site	3/3 (100%)	--	18 - 34	N/A	--	--	--	--	Normal 95% UPL(t)	37	0
			No Outliers	Background	11/11 (100%)	--	26 - 37								
			Zinc (mg/kg)	Site	3/3 (100%)	--	3,600 - 39,000	N/A	--	--	--	--	Normal 95% UPL(t)	320	3
				Background	12/12 (100%)	--	170 - 300								
		Miscellaneous	Total Organic Carbon (mg/kg)	Site	3/3 (100%)	--	29,000 - 97,000	N/A	--	--	--	--	Nonparametric 95% UPL	37,000	2
				Background	12/12 (100%)	--	20,000 - 37,000								
			Total Organic Carbon (mg/kg)	Site	3/3 (100%)	--	29,000 - 97,000	N/A	--	--	--	--	Normal 95% UPL(t)	25,000	3
			No Outliers	Background	10/10 (100%)	--	20,000 - 25,000								
Village Park Maintenance Worker (1A)	Surface Sediment	Metals	Aluminum (mg/kg)	Site	9/9 (100%)	--	2,500 - 17,000	WMW Test (w/out NDs)	10	31	< 0.05	No	Normal 95% UPL(t)	21,000	0
				Background	12/12 (100%)	--	12,000 - 20,000								
			Antimony (mg/kg)	Site	1/8 (12.5%)	7.2 - 8.6	0.96	N/A	--	--	--	--	Maximum Detect	1.8	0
				Background	2/11 (18.2%)	11 - 17	0.86 - 1.8								
			Arsenic (mg/kg)	Site	9/9 (100%)	--	4.2 - 27	WMW Test (w/out NDs)	68	31	0.849	Yes	Nonparametric 95% UPL	7.3	7
				Background	12/12 (100%)	--	4.9 - 7.3								
			Barium (mg/kg)	Site	9/9 (100%)	--	93 - 900	WMW Test (w/out NDs)	2.313	-1.645	0.99	Yes	Normal 95% UPL(t)	170	5
				Background	12/12 (100%)	--	110 - 160								
			Beryllium (mg/kg)	Site	9/9 (100%)	--	0.20 - 0.82	WMW Test (w/out NDs)	12.5	31	< 0.05	No	Normal 95% UPL(t)	1.0	0
				Background	12/12 (100%)	--	0.63 - 1.0								
			Cadmium (mg/kg)	Site	8/9 (88.9%)	0.65	1.7 - 110	Gehan Test	2.203	-1.645	0.986	Yes	Normal 95% UPL(t)	2.7	7
				Background	12/12 (100%)	--	1.4 - 2.5								
			Calcium (mg/kg)	Site	9/9 (100%)	--	15,000 - 61,000	WMW Test (w/out NDs)	44	31	0.25	Yes	Normal 95% UPL(t)	43,000	2
				Background	12/12 (100%)	--	31,000 - 43,000								
			Chromium (mg/kg)	Site	9/9 (100%)	--	5.7 - 41	WMW Test (w/out NDs)	14	31	< 0.05	No	Normal 95% UPL(t)	46	0
				Background	12/12 (100%)	--	32 - 44								

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Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Village Park Maintenance Worker (1A)	Surface Sediment	Metals	Cobalt (mg/kg)	Site	9/9 (100%)	--	1.9 - 14	WMW Test (w/out NDs)	26	31	< 0.05	No	Normal 95% UPL(t)	11	2
				Background	12/12 (100%)	--	7.0 - 10								
			Copper (mg/kg)	Site	9/9 (100%)	--	10 - 170	WMW Test (w/out NDs)	69	31	0.865	Yes	Normal 95% UPL(t)	47	5
				Background	12/12 (100%)	--	34 - 47								
			Cyanide (mg/kg)	Site	3/6 (50.0%)	0.22 - 3.4	0.36 - 1.1	N/A	--	--	--	--	--	--	3
				Background	0/6 (0.0%)	4.9 - 6.3	--								
			Iron (mg/kg)	Site	9/9 (100%)	--	11,000 - 28,000	WMW Test (w/out NDs)	18	31	< 0.05	No	Normal 95% UPL(t)	30,000	0
				Background	12/12 (100%)	--	19,000 - 29,000								
			Lead (mg/kg)	Site	9/9 (100%)	--	8.4 - 1,200	WMW Test (w/out NDs)	96	31	0.999	Yes	Normal 95% UPL(t)	44	8
				Background	12/12 (100%)	--	30 - 44								
			Magnesium (mg/kg)	Site	9/9 (100%)	--	5,400 - 33,000	WMW Test (w/out NDs)	73.5	31	0.922	Yes	Normal 95% UPL(t)	12,000	3
				Background	12/12 (100%)	--	9,900 - 12,000								
			Manganese (mg/kg)	Site	9/9 (100%)	--	170 - 960	WMW Test (w/out NDs)	27	31	< 0.05	No	WH Gamma 95% UPL	790	2
				Background	12/12 (100%)	--	480 - 730								
			Mercury (mg/kg)	Site	6/9 (66.7%)	0.10 - 0.13	0.097 - 0.69	N/A	--	--	--	--	Normal 95% UPL(t)	0.26	2
				Background	12/12 (100%)	--	0.12 - 0.27								
			Nickel (mg/kg)	Site	9/9 (100%)	--	8.8 - 31	WMW Test (w/out NDs)	12	31	< 0.05	No	Normal 95% UPL(t)	38	0
				Background	12/12 (100%)	--	23 - 39								
			Potassium (mg/kg)	Site	9/9 (100%)	--	290 - 2,800	WMW Test (w/out NDs)	12	31	< 0.05	No	Normal 95% UPL(t)	3,500	0
				Background	12/12 (100%)	--	2,100 - 3,300								
			Selenium (mg/kg)	Site	1/9 (11.1%)	4.2 - 11	0.78	N/A	--	--	--	--	--	--	1
				Background	0/12 (0.0%)	6.1 - 10	--								
			Silver (mg/kg)	Site	8/9 (88.9%)	1.3	0.32 - 10	Gehan Test	2.605	-1.645	0.995	Yes	Nonparametric 95% UPL	0.69	6
				Background	12/12 (100%)	--	0.30 - 0.69								
			Sodium (mg/kg)	Site	3/9 (33.3%)	600 - 1,400	190 - 390	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	430	0
				Background	5/12 (41.7%)	930 - 1,200	290 - 400								
			Thallium (mg/kg)	Site	7/9 (77.8%)	6.7 - 7.7	0.38 - 2.4	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	2.4	0
				Background	11/12 (91.7%)	6.0	0.70 - 2.4								
			Vanadium (mg/kg)	Site	9/9 (100%)	--	8.4 - 54	WMW Test (w/out NDs)	34	31	0.083	Yes	Normal 95% UPL(t)	37	1
				Background	12/12 (100%)	--	22 - 34								
			Zinc (mg/kg)	Site	9/9 (100%)	--	53 - 7,100	WMW Test (w/out NDs)	96	31	0.999	Yes	Normal 95% UPL(t)	240	8
				Background	12/12 (100%)	--	160 - 230								
		Metals-SPLP	Arsenic (mg/L)	Site	4/6 (66.7%)	0.0028 - 0.0033	0.0059 - 0.014	N/A	--	--	--	--	Maximum Detect	0.0053	4
				Background	3/5 (60.0%)	0.0027 - 0.0027	0.0028 - 0.0053								
			Barium (mg/L)	Site	6/6 (100%)	--	0.034 - 0.061	N/A	--	--	--	--	Maximum Detect	0.079	0
				Background	5/5 (100%)	--	0.048 - 0.079								
			Cadmium (mg/L)	Site	5/6 (83.3%)	0.00020	0.00026 - 0.015	N/A	--	--	--	--	--	--	5
				Background	0/5 (0.0%)	0.00020 - 0.00020	--								
			Chromium (mg/L)	Site	3/6 (50.0%)	0.010 - 0.010	0.0054 - 0.0087	N/A	--	--	--	--	Maximum Detect	0.019	0
				Background	5/5 (100%)	--	0.0090 - 0.019								
			Lead (mg/L)	Site	5/6 (83.3%)	0.0031	0.0022 - 0.13	N/A	--	--	--	--	--	--	5
				Background	0/5 (0.0%)	0.0052 - 0.015	--								
			Mercury (mg/L)	Site	0/6 (0.0%)	0.00010 - 0.00010	--	N/A	--	--	--	--	--	--	0
				Background	0/5 (0.0%)	0.00010 - 0.00010	--								
			Selenium (mg/L)	Site	1/2 (50.0%)	0.0027	0.0051	N/A	--	--	--	--	--	--	1
				Background	0/5 (0.0%)	0.0029 - 0.0029	--								
			Silver (mg/L)	Site	2/6 (33.3%)	0.00070 - 0.0012	0.00073 - 0.0013	N/A	--	--	--	--	--	--	2
				Background	0/5 (0.0%)	0.00050 - 0.00050	--								
		Miscellaneous	Total Organic Carbon (mg/kg)	Site	9/9 (100%)	--	7,000 - 86,000	WMW Test (w/out NDs)	64	31	0.772	Yes	Nonparametric 95% UPL	36,000	2
				Background	12/12 (100%)	--	19,000 - 36,000								
			Total Organic Carbon (mg/kg)	Site	9/9 (100%)	--	7,000 - 86,000	WMW Test (w/out NDs)	62	28	0.838	Yes	Nonparametric 95% UPL	33,000	3
			No Outliers	Background	11/11 (100%)	--	19,000 - 33,000								
		Miscellaneous-SPLP	Ammonia (mg/L)	Site	1/1 (100%)	--	0.18	N/A	--	--	--	--	Maximum Detect	2.4	0
				Background	5/5 (100%)	--	0.36 - 2.4								
			Fluoride (mg/L)	Site	1/6 (16.7%)	0.20 - 0.20	0.15	N/A	--	--	--	--	Maximum Detect	0.18	0
				Background	1/6 (16.7%)	0.20 - 0.20	0.18								
		PCBs	Aroclor 1016 (mg/kg)	Site	0/6 (0.0%)	0.017 - 0.045	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	0.024 - 0.031	--								
			Aroclor 1221 (mg/kg)	Site	0/6 (0.0%)	0.024 - 0.092	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	0.034 - 0.044	--								
			Aroclor 1232 (mg/kg)	Site	0/6 (0.0%)	0.012 - 0.045	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	0.017 - 0.022	--								
			Aroclor 1242 (mg/kg)	Site	0/6 (0.0%)	0.012 - 0.045	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	0.017 - 0.022	--								
			Aroclor 1248 (mg/kg)	Site	0/6 (0.0%)	0.012 - 0.045	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	0.017 - 0.022	--								

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Village Park Maintenance Worker (1A)	Surface Sediment	PCBs	Aroclor 1254 (mg/kg)	Site	2/6 (33.3%)	0.043 - 0.044	0.023 - 0.11	N/A	--	--	--	--	Maximum Detect	0.068	1
				Background	2/6 (33.3%)	0.017 - 0.022	0.053 - 0.068								
			Aroclor 1260 (mg/kg)	Site	0/6 (0.0%)	0.012 - 0.045	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	0.017 - 0.022	--								
			Total PCBs (mg/kg)	Site	2/6 (33.3%)	0.087 - 0.089	0.023 - 0.11	N/A	--	--	--	--	Maximum Detect	0.068	1
				Background	2/6 (33.3%)	0.034 - 0.044	0.053 - 0.068								
		Pesticides/Herbicides	4,4'-DDD (ug/kg)	Site	2/6 (33.3%)	2.3 - 4.4	4.2 - 11	N/A	--	--	--	--	--	--	2
				Background	0/6 (0.0%)	2.9 - 4.2	--								
			4,4'-DDE (ug/kg)	Site	3/6 (50.0%)	4.3 - 4.4	2.9 - 15	N/A	--	--	--	--	Maximum Detect	7.2	1
				Background	6/6 (100%)	--	2.3 - 7.2								
			4,4'-DDT (ug/kg)	Site	1/6 (16.7%)	2.3 - 4.5	2.2	N/A	--	--	--	--	Maximum Detect	6.2	0
				Background	6/6 (100%)	--	2.7 - 6.2								
			Aldrin (ug/kg)	Site	0/6 (0.0%)	1.2 - 2.3	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	1.7 - 2.2	--								
			Alpha-BHC (ug/kg)	Site	1/6 (16.7%)	1.2 - 2.3	0.76	N/A	--	--	--	--	--	--	1
				Background	0/6 (0.0%)	1.7 - 2.2	--								
			Alpha-Chlordane (ug/kg)	Site	1/6 (16.7%)	1.2 - 2.3	4.5	N/A	--	--	--	--	Maximum Detect	0.71	1
				Background	5/6 (83.3%)	2.0	0.46 - 0.71								
			Beta-BHC (ug/kg)	Site	0/5 (0.0%)	0.59 - 2.3	--	N/A	--	--	--	--	Maximum Detect	1.9	0
				Background	5/6 (83.3%)	0.97	0.58 - 1.9								
			delta-BHC (ug/kg)	Site	0/6 (0.0%)	1.2 - 2.3	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	1.7 - 2.2	--								
			Dieldrin (ug/kg)	Site	0/6 (0.0%)	2.3 - 4.5	--	N/A	--	--	--	--	Maximum Detect	3.9	0
				Background	6/6 (100%)	--	2.0 - 3.9								
			Endosulfan I (ug/kg)	Site	0/6 (0.0%)	1.2 - 2.3	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	1.7 - 2.2	--								
			Endosulfan II (ug/kg)	Site	0/6 (0.0%)	2.3 - 4.5	--	N/A	--	--	--	--	Maximum Detect	1.4	0
				Background	1/6 (16.7%)	3.3 - 4.2	1.4								
			Endosulfan sulfate (ug/kg)	Site	0/6 (0.0%)	2.3 - 4.5	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	3.3 - 4.2	--								
			Endrin (ug/kg)	Site	0/6 (0.0%)	2.3 - 4.5	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	3.3 - 4.2	--								
			Endrin aldehyde (ug/kg)	Site	0/6 (0.0%)	2.3 - 4.5	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	3.3 - 4.2	--								
			Endrin ketone (ug/kg)	Site	0/6 (0.0%)	2.3 - 4.5	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	3.3 - 4.2	--								
			gamma-BHC (Lindane) (ug/kg)	Site	0/6 (0.0%)	1.2 - 2.3	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	1.7 - 2.2	--								
			gamma-Chlordane (ug/kg)	Site	2/6 (33.3%)	2.2 - 2.3	1.9 - 6.5	N/A	--	--	--	--	Maximum Detect	7.5	0
				Background	6/6 (100%)	--	4.2 - 7.5								
			Heptachlor (ug/kg)	Site	0/6 (0.0%)	1.2 - 2.3	--	N/A	--	--	--	--	Maximum Detect	0.68	0
				Background	3/6 (50.0%)	1.8 - 1.9	0.51 - 0.68								
			Heptachlor epoxide (ug/kg)	Site	2/6 (33.3%)	2.2 - 2.3	0.63 - 0.72	N/A	--	--	--	--	Maximum Detect	3.1	0
				Background	2/6 (33.3%)	1.9 - 2.2	2.3 - 3.1								
			Methoxychlor (ug/kg)	Site	0/6 (0.0%)	12 - 23	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	17 - 22	--								
			Toxaphene (ug/kg)	Site	0/6 (0.0%)	58 - 230	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	83 - 110	--								
		SVOCs	1-Methylnaphthalene (mg/kg)	Site	5/6 (83.3%)	0.0055	0.00098 - 0.70	N/A	--	--	--	--	Maximum Detect	0.0079	3
				Background	6/6 (100%)	--	0.0038 - 0.0079								
			2-Methylnaphthalene (mg/kg)	Site	5/6 (83.3%)	0.0055	0.0013 - 1.0	N/A	--	--	--	--	Maximum Detect	0.016	2
				Background	6/6 (100%)	--	0.0065 - 0.016								
			Acenaphthene (mg/kg)	Site	5/6 (83.3%)	0.0055	0.0017 - 2.3	N/A	--	--	--	--	Maximum Detect	0.015	3
				Background	6/6 (100%)	--	0.0061 - 0.015								
			Acenaphthylene (mg/kg)	Site	6/6 (100%)	--	0.00093 - 0.28	N/A	--	--	--	--	Maximum Detect	0.083	1
				Background	6/6 (100%)	--	0.031 - 0.083								
			Anthracene (mg/kg)	Site	6/6 (100%)	--	0.0029 - 3.2	N/A	--	--	--	--	Maximum Detect	0.078	2
				Background	6/6 (100%)	--	0.026 - 0.078								
			Benzo(a)anthracene (mg/kg)	Site	6/6 (100%)	--	0.0095 - 4.0	N/A	--	--	--	--	Maximum Detect	0.23	2
				Background	6/6 (100%)	--	0.083 - 0.23								
			Benzo(a)pyrene (mg/kg)	Site	6/6 (100%)	--	0.0069 - 3.4	N/A	--	--	--	--	Maximum Detect	0.43	1
				Background	6/6 (100%)	--	0.12 - 0.43								
			Benzo(b)fluoranthene (mg/kg)	Site	6/6 (100%)	--	0.0070 - 2.8	N/A	--	--	--	--	Maximum Detect	0.41	1
				Background	6/6 (100%)	--	0.15 - 0.41								
			Benzo(g,h,i)perylene (mg/kg)	Site	6/6 (100%)	--	0.0031 - 1.2	N/A	--	--	--	--	Maximum Detect	0.38	1
				Background	6/6 (100%)	--	0.12 - 0.38								

Table A-2
Hypothesis Testing and Background Screening Levels - Sediment
OU5 Baseline Human Health Risk Assessment
DePue Lake, DePue, Illinois

								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Village Park Maintenance Worker (1A)	Surface Sediment	SVOCs	Benzo(k)fluoranthene (mg/kg)	Site	6/6 (100%)	--	0.0069 - 3.0	N/A	--	--	--	--	Maximum Detect	0.39	1
				Background	6/6 (100%)	--	0.10 - 0.39								
			Chrysene (mg/kg)	Site	6/6 (100%)	--	0.0085 - 3.5	N/A	--	--	--	--	Maximum Detect	0.42	2
				Background	6/6 (100%)	--	0.11 - 0.42								
			Dibenz(a,h)anthracene (mg/kg)	Site	6/6 (100%)	--	0.0012 - 0.55	N/A	--	--	--	--	Maximum Detect	0.083	1
				Background	6/6 (100%)	--	0.033 - 0.083								
			Fluoranthene (mg/kg)	Site	6/6 (100%)	--	0.021 - 11	N/A	--	--	--	--	Maximum Detect	0.52	2
				Background	6/6 (100%)	--	0.14 - 0.52								
			Fluorene (mg/kg)	Site	6/6 (100%)	--	0.00090 - 2.2	N/A	--	--	--	--	Maximum Detect	0.023	2
				Background	6/6 (100%)	--	0.010 - 0.023								
			Indeno(1,2,3-cd)pyrene (mg/kg)	Site	6/6 (100%)	--	0.0041 - 1.7	N/A	--	--	--	--	Maximum Detect	0.42	1
				Background	6/6 (100%)	--	0.13 - 0.42								
			Naphthalene (mg/kg)	Site	5/6 (83.3%)	0.0055	0.0012 - 2.1	N/A	--	--	--	--	Maximum Detect	0.026	1
				Background	6/6 (100%)	--	0.0093 - 0.026								
			Phenanthrene (mg/kg)	Site	6/6 (100%)	--	0.0099 - 14	N/A	--	--	--	--	Maximum Detect	0.11	3
				Background	6/6 (100%)	--	0.046 - 0.11								
			Pyrene (mg/kg)	Site	6/6 (100%)	--	0.017 - 8.5	N/A	--	--	--	--	Maximum Detect	0.64	2
				Background	6/6 (100%)	--	0.18 - 0.64								
			Total PAHs (mg/kg)	Site	6/6 (100%)	--	0.10 - 65	N/A	--	--	--	--	Maximum Detect	4.3	2
				Background	6/6 (100%)	--	1.3 - 4.3								
	Depth-weighted Sediment	Metals	Aluminum (mg/kg)	Site	5/5 (100%)	--	3,400 - 17,000	N/A	--	--	--	--	Normal 95% UPL(t)	21,000	0
				Background	12/12 (100%)	--	14,000 - 21,000								
			Antimony (mg/kg)	Site	1/4 (25.0%)	8.0 - 8.7	7.6	N/A	--	--	--	--	Maximum Detect	6.6	1
				Background	2/11 (18.2%)	11 - 14	5.0 - 6.6								
			Arsenic (mg/kg)	Site	5/5 (100%)	--	10 - 13	N/A	--	--	--	--	Normal 95% UPL(t)	9.5	5
				Background	12/12 (100%)	--	8.0 - 9.5								
			Barium (mg/kg)	Site	5/5 (100%)	--	180 - 940	N/A	--	--	--	--	Normal 95% UPL(t)	180	4
				Background	12/12 (100%)	--	150 - 180								
			Beryllium (mg/kg)	Site	5/5 (100%)	--	0.38 - 0.86	N/A	--	--	--	--	Normal 95% UPL(t)	1.1	0
				Background	12/12 (100%)	--	0.82 - 1.1								
			Cadmium (mg/kg)	Site	5/5 (100%)	--	10 - 90	N/A	--	--	--	--	Normal 95% UPL(t)	5.3	5
				Background	12/12 (100%)	--	1.8 - 4.9								
			Calcium (mg/kg)	Site	5/5 (100%)	--	23,000 - 38,000	N/A	--	--	--	--	Normal 95% UPL(t)	31,000	1
				Background	12/12 (100%)	--	23,000 - 31,000								
			Chromium (mg/kg)	Site	5/5 (100%)	--	11 - 44	N/A	--	--	--	--	Normal 95% UPL(t)	64	0
				Background	12/12 (100%)	--	39 - 63								
			Cobalt (mg/kg)	Site	5/5 (100%)	--	4.7 - 16	N/A	--	--	--	--	Normal 95% UPL(t)	11	2
				Background	12/12 (100%)	--	8.5 - 11								
			Copper (mg/kg)	Site	5/5 (100%)	--	45 - 210	N/A	--	--	--	--	Normal 95% UPL(t)	58	4
				Background	12/12 (100%)	--	36 - 56								
			Cyanide (mg/kg)	Site	1/1 (100%)	--	0.81	N/A	--	--	--	--	--	--	1
				Background	0/1 (0.0%)	5.2	--								
			Iron (mg/kg)	Site	5/5 (100%)	--	11,000 - 27,000	N/A	--	--	--	--	Normal 95% UPL(t)	30,000	0
				Background	12/12 (100%)	--	23,000 - 30,000								
			Lead (mg/kg)	Site	5/5 (100%)	--	88 - 340	N/A	--	--	--	--	Normal 95% UPL(t)	63	5
				Background	12/12 (100%)	--	34 - 58								
			Magnesium (mg/kg)	Site	5/5 (100%)	--	9,700 - 16,000	N/A	--	--	--	--	Normal 95% UPL(t)	10,000	4
				Background	12/12 (100%)	--	8,800 - 10,000								
			Manganese (mg/kg)	Site	5/5 (100%)	--	350 - 930	N/A	--	--	--	--	Normal 95% UPL(t)	720	1
				Background	12/12 (100%)	--	540 - 710								
			Mercury (mg/kg)	Site	5/5 (100%)	--	0.16 - 1.3	N/A	--	--	--	--	Normal 95% UPL(t)	0.36	2
				Background	12/12 (100%)	--	0.16 - 0.34								
			Nickel (mg/kg)	Site	5/5 (100%)	--	13 - 36	N/A	--	--	--	--	Normal 95% UPL(t)	49	0
				Background	12/12 (100%)	--	34 - 50								
			Potassium (mg/kg)	Site	5/5 (100%)	--	450 - 2,400	N/A	--	--	--	--	Normal 95% UPL(t)	3,100	0
				Background	12/12 (100%)	--	2,000 - 3,100								
			Selenium (mg/kg)	Site	4/5 (80.0%)	4.8	2.5 - 5.4	N/A	--	--	--	--	--	--	4
				Background	0/12 (0.0%)	5.7 - 8.4	--								
			Silver (mg/kg)	Site	5/5 (100%)	--	1.3 - 2.5	N/A	--	--	--	--	WH Gamma 95% UPL	1.5	4
				Background	12/12 (100%)	--	0.30 - 1.1								
			Sodium (mg/kg)	Site	3/5 (60.0%)	780 - 1,000	430 - 480	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	850	0
				Background	5/12 (41.7%)	910 - 1,100	240 - 760								
			Thallium (mg/kg)	Site	4/5 (80.0%)	5.0	0.66 - 2.7	N/A	--	--	--	--	HW Gamma 95% UPL	3.0	0
				Background	12/12 (100%)	--	0.99 - 3.3								
			Vanadium (mg/kg)	Site	5/5 (100%)	--	14 - 33	N/A	--	--	--	--	Normal 95% UPL(t)	39	0
				Background	12/12 (100%)	--	26 - 38								

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DePue Lake, DePue, Illinois

								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Village Park Maintenance Worker (1A)	Depth-weighted Sediment	Metals	Vanadium (mg/kg)	Site	5/5 (100%)	--	14 - 33	N/A	--	--	--	--	Normal 95% UPL(t)	37	0
			No Outliers	Background	11/11 (100%)	--	26 - 37								
			Zinc (mg/kg)	Site	5/5 (100%)	--	1,900 - 6,700	N/A	--	--	--	--	Normal 95% UPL(t)	320	5
				Background	12/12 (100%)	--	170 - 300								
		Miscellaneous	Total Organic Carbon (mg/kg)	Site	5/5 (100%)	--	21,000 - 52,000	N/A	--	--	--	--	Nonparametric 95% UPL	37,000	3
				Background	12/12 (100%)	--	20,000 - 37,000								
			Total Organic Carbon (mg/kg)	Site	5/5 (100%)	--	21,000 - 52,000	N/A	--	--	--	--	Normal 95% UPL(t)	25,000	4
			No Outliers	Background	10/10 (100%)	--	20,000 - 25,000								
		Miscellaneous-SPLP	Fluoride (mg/L)	Site	0/1 (0.0%)	0.20	--	N/A	--	--	--	--	Maximum Detect	0.29	0
				Background	1/1 (100%)	--	0.29								
		PCBs	Aroclor 1016 (mg/kg)	Site	0/1 (0.0%)	0.046	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	0.026	--								
			Aroclor 1221 (mg/kg)	Site	0/1 (0.0%)	0.092	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	0.036	--								
			Aroclor 1232 (mg/kg)	Site	0/1 (0.0%)	0.046	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	0.018	--								
			Aroclor 1242 (mg/kg)	Site	0/1 (0.0%)	0.046	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	0.018	--								
			Aroclor 1248 (mg/kg)	Site	0/1 (0.0%)	0.046	--	N/A	--	--	--	--	Maximum Detect	0.10	0
				Background	1/1 (100%)	--	0.10								
			Aroclor 1254 (mg/kg)	Site	1/1 (100%)	--	0.062	N/A	--	--	--	--	Maximum Detect	0.087	0
				Background	1/1 (100%)	--	0.087								
			Aroclor 1260 (mg/kg)	Site	0/1 (0.0%)	0.046	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	0.018	--								
			Total PCBs (mg/kg)	Site	1/1 (100%)	--	0.088	N/A	--	--	--	--	Maximum Detect	0.18	0
				Background	1/1 (100%)	--	0.18								
		Pesticides/Herbicides	4,4'-DDD (ug/kg)	Site	1/1 (100%)	--	10	N/A	--	--	--	--	Maximum Detect	3.3	1
				Background	1/1 (100%)	--	3.3								
			4,4'-DDE (ug/kg)	Site	1/1 (100%)	--	9.1	N/A	--	--	--	--	Maximum Detect	8.6	1
				Background	1/1 (100%)	--	8.6								
			4,4'-DDT (ug/kg)	Site	1/1 (100%)	--	4.0	N/A	--	--	--	--	Maximum Detect	5.7	0
				Background	1/1 (100%)	--	5.7								
			Aldrin (ug/kg)	Site	0/1 (0.0%)	2.4	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	1.8	--								
			Alpha-BHC (ug/kg)	Site	0/1 (0.0%)	2.4	--	N/A	--	--	--	--	Maximum Detect	2.0	0
				Background	1/1 (100%)	--	2.0								
			Alpha-Chlordane (ug/kg)	Site	1/1 (100%)	--	1.8	N/A	--	--	--	--	Maximum Detect	1.2	1
				Background	1/1 (100%)	--	1.2								
			Beta-BHC (ug/kg)	Site	0/1 (0.0%)	2.4	--	N/A	--	--	--	--	Maximum Detect	1.7	0
				Background	1/1 (100%)	--	1.7								
			delta-BHC (ug/kg)	Site	1/1 (100%)	--	0.99	N/A	--	--	--	--	--	--	1
				Background	0/1 (0.0%)	1.8	--								
			Dieldrin (ug/kg)	Site	0/1 (0.0%)	4.6	--	N/A	--	--	--	--	Maximum Detect	4.9	0
				Background	1/1 (100%)	--	4.9								
			Endosulfan I (ug/kg)	Site	0/1 (0.0%)	2.4	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	1.8	--								
			Endosulfan II (ug/kg)	Site	0/1 (0.0%)	4.6	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	3.5	--								
			Endosulfan sulfate (ug/kg)	Site	0/1 (0.0%)	4.6	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	3.5	--								
			Endrin (ug/kg)	Site	0/1 (0.0%)	4.6	--	N/A	--	--	--	--	Maximum Detect	3.1	0
				Background	1/1 (100%)	--	3.1								
			Endrin aldehyde (ug/kg)	Site	0/1 (0.0%)	4.6	--	N/A	--	--	--	--	Maximum Detect	3.1	0
				Background	1/1 (100%)	--	3.1								
			Endrin ketone (ug/kg)	Site	1/1 (100%)	--	4.0	N/A	--	--	--	--	--	--	1
				Background	0/1 (0.0%)	3.5	--								
			gamma-BHC (Lindane) (ug/kg)	Site	0/1 (0.0%)	2.4	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	1.8	--								
			gamma-Chlordane (ug/kg)	Site	1/1 (100%)	--	3.0	N/A	--	--	--	--	Maximum Detect	5.5	0
				Background	1/1 (100%)	--	5.5								
			Heptachlor (ug/kg)	Site	0/1 (0.0%)	2.4	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	1.8	--								
			Heptachlor epoxide (ug/kg)	Site	1/1 (100%)	--	2.2	N/A	--	--	--	--	Maximum Detect	4.2	0
				Background	1/1 (100%)	--	4.2								

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								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Village Park Maintenance Worker (1A)	Depth-weighted Sediment	Pesticides/Herbicides	Methoxychlor (ug/kg)	Site	0/1 (0.0%)	24	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	18	--								
			Toxaphene (ug/kg)	Site	0/1 (0.0%)	240	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	88	--								
		SVOCs	1-Methylnaphthalene (mg/kg)	Site	1/1 (100%)	--	0.22	N/A	--	--	--	--	Maximum Detect	0.0057	1
				Background	1/1 (100%)	--	0.0057								
			2-Methylnaphthalene (mg/kg)	Site	1/1 (100%)	--	0.31	N/A	--	--	--	--	Maximum Detect	0.014	1
				Background	1/1 (100%)	--	0.014								
			Acenaphthene (mg/kg)	Site	1/1 (100%)	--	0.67	N/A	--	--	--	--	Maximum Detect	0.016	1
				Background	1/1 (100%)	--	0.016								
			Acenaphthylene (mg/kg)	Site	1/1 (100%)	--	0.12	N/A	--	--	--	--	Maximum Detect	0.088	1
				Background	1/1 (100%)	--	0.088								
			Anthracene (mg/kg)	Site	1/1 (100%)	--	0.99	N/A	--	--	--	--	Maximum Detect	0.086	1
				Background	1/1 (100%)	--	0.086								
			Benzo(a)anthracene (mg/kg)	Site	1/1 (100%)	--	1.4	N/A	--	--	--	--	Maximum Detect	0.21	1
				Background	1/1 (100%)	--	0.21								
			Benzo(a)pyrene (mg/kg)	Site	1/1 (100%)	--	1.2	N/A	--	--	--	--	Maximum Detect	0.23	1
				Background	1/1 (100%)	--	0.23								
			Benzo(b)fluoranthene (mg/kg)	Site	1/1 (100%)	--	1.0	N/A	--	--	--	--	Maximum Detect	0.23	1
				Background	1/1 (100%)	--	0.23								
			Benzo(g,h,i)perylene (mg/kg)	Site	1/1 (100%)	--	0.47	N/A	--	--	--	--	Maximum Detect	0.20	1
				Background	1/1 (100%)	--	0.20								
			Benzo(k)fluoranthene (mg/kg)	Site	1/1 (100%)	--	1.1	N/A	--	--	--	--	Maximum Detect	0.21	1
				Background	1/1 (100%)	--	0.21								
			Chrysene (mg/kg)	Site	1/1 (100%)	--	1.3	N/A	--	--	--	--	Maximum Detect	0.25	1
				Background	1/1 (100%)	--	0.25								
			Dibenz(a,h)anthracene (mg/kg)	Site	1/1 (100%)	--	0.20	N/A	--	--	--	--	Maximum Detect	0.062	1
				Background	1/1 (100%)	--	0.062								
			Fluoranthene (mg/kg)	Site	1/1 (100%)	--	3.7	N/A	--	--	--	--	Maximum Detect	0.31	1
				Background	1/1 (100%)	--	0.31								
			Fluorene (mg/kg)	Site	1/1 (100%)	--	0.65	N/A	--	--	--	--	Maximum Detect	0.030	1
				Background	1/1 (100%)	--	0.030								
			Indeno(1,2,3-cd)pyrene (mg/kg)	Site	1/1 (100%)	--	0.63	N/A	--	--	--	--	Maximum Detect	0.22	1
				Background	1/1 (100%)	--	0.22								
			Naphthalene (mg/kg)	Site	1/1 (100%)	--	0.61	N/A	--	--	--	--	Maximum Detect	0.020	1
				Background	1/1 (100%)	--	0.020								
			Phenanthrene (mg/kg)	Site	1/1 (100%)	--	4.3	N/A	--	--	--	--	Maximum Detect	0.10	1
				Background	1/1 (100%)	--	0.10								
Village Park Maintenance Worker (1A)	Depth-weighted Sediment	SVOCs	Pyrene (mg/kg)	Site	1/1 (100%)	--	3.0	N/A	--	--	--	--	Maximum Detect	0.39	1
				Background	1/1 (100%)	--	0.39								
			Total PAHs (mg/kg)	Site	1/1 (100%)	--	22	N/A	--	--	--	--	Maximum Detect	2.7	1
				Background	1/1 (100%)	--	2.7								
Village Park Recreational User 1B	Surface Sediment	Metals	Aluminum (mg/kg)	Site	9/9 (100%)	--	2,500 - 17,000	WMW Test (w/out NDs)	10	31	< 0.05	No	Normal 95% UPL(t)	21,000	0
				Background	12/12 (100%)	--	12,000 - 20,000								
			Antimony (mg/kg)	Site	1/8 (12.5%)	7.2 - 8.6	0.96	N/A	--	--	--	--	Maximum Detect	1.8	0
				Background	2/11 (18.2%)	11 - 17	0.86 - 1.8								
			Arsenic (mg/kg)	Site	9/9 (100%)	--	4.2 - 27	WMW Test (w/out NDs)	68	31	0.849	Yes	Nonparametric 95% UPL	7.3	7
				Background	12/12 (100%)	--	4.9 - 7.3								
			Barium (mg/kg)	Site	9/9 (100%)	--	93 - 900	WMW Test (w/out NDs)	68	31	0.849	Yes	Normal 95% UPL(t)	170	5
				Background	12/12 (100%)	--	110 - 160								
			Beryllium (mg/kg)	Site	9/9 (100%)	--	0.20 - 0.82	WMW Test (w/out NDs)	12.5	31	< 0.05	No	Normal 95% UPL(t)	1.0	0
				Background	12/12 (100%)	--	0.63 - 1.0								
			Cadmium (mg/kg)	Site	8/9 (88.9%)	0.65	1.7 - 110	Gehan Test	2.203	-1.645	0.986	Yes	Normal 95% UPL(t)	2.7	7
				Background	12/12 (100%)	--	1.4 - 2.5								
			Calcium (mg/kg)	Site	9/9 (100%)	--	15,000 - 61,000	WMW Test (w/out NDs)	44	31	0.25	Yes	Normal 95% UPL(t)	43,000	2
				Background	12/12 (100%)	--	31,000 - 43,000								
			Chromium (mg/kg)	Site	9/9 (100%)	--	5.7 - 41	WMW Test (w/out NDs)	14	31	< 0.05	No	Normal 95% UPL(t)	46	0
				Background	12/12 (100%)	--	32 - 44								
			Cobalt (mg/kg)	Site	9/9 (100%)	--	1.9 - 14	WMW Test (w/out NDs)	26	31	< 0.05	No	Normal 95% UPL(t)	11	2
				Background	12/12 (100%)	--	7.0 - 10								
			Copper (mg/kg)	Site	9/9 (100%)	--	10 - 170	WMW Test (w/out NDs)	69	31	0.865	Yes	Normal 95% UPL(t)	47	5
				Background	12/12 (100%)	--	34 - 47								
			Cyanide (mg/kg)	Site	3/6 (50.0%)	0.22 - 3.4	0.36 - 1.1	N/A	--	--	--	--	--	--	3
				Background	0/6 (0.0%)	4.9 - 6.3	--								
			Iron (mg/kg)	Site	9/9 (100%)	--	11,000 - 28,000	WMW Test (w/out NDs)	18	31	< 0.05	No	Normal 95% UPL(t)	30,000	0
				Background	12/12 (100%)	--	19,000 - 29,000								

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Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Village Park Recreational User 1B	Surface Sediment	Metals	Lead (mg/kg)	Site	9/9 (100%)	--	8.4 - 1,200	WMW Test (w/out NDs)	96	31	0.999	Yes	Normal 95% UPL(t)	44	8
				Background	12/12 (100%)	--	30 - 44								
			Magnesium (mg/kg)	Site	9/9 (100%)	--	5,400 - 33,000	WMW Test (w/out NDs)	73.5	31	0.922	Yes	Normal 95% UPL(t)	12,000	3
				Background	12/12 (100%)	--	9,900 - 12,000								
			Manganese (mg/kg)	Site	9/9 (100%)	--	170 - 960	WMW Test (w/out NDs)	27	31	< 0.05	No	WH Gamma 95% UPL	790	2
				Background	12/12 (100%)	--	480 - 730								
			Mercury (mg/kg)	Site	6/9 (66.7%)	0.10 - 0.13	0.097 - 0.69	N/A	--	--	--	--	Normal 95% UPL(t)	0.26	2
				Background	12/12 (100%)	--	0.12 - 0.27								
			Nickel (mg/kg)	Site	9/9 (100%)	--	8.8 - 31	WMW Test (w/out NDs)	12	31	< 0.05	No	Normal 95% UPL(t)	38	0
				Background	12/12 (100%)	--	23 - 39								
			Potassium (mg/kg)	Site	9/9 (100%)	--	290 - 2,800	WMW Test (w/out NDs)	12	31	< 0.05	No	Normal 95% UPL(t)	3,500	0
				Background	12/12 (100%)	--	2,100 - 3,300								
			Selenium (mg/kg)	Site	1/9 (11.1%)	4.2 - 11	0.78	N/A	--	--	--	--	--	--	1
				Background	0/12 (0.0%)	6.1 - 10	--								
			Silver (mg/kg)	Site	8/9 (88.9%)	1.3	0.32 - 10	Gehan Test	2.605	-1.645	0.995	Yes	Nonparametric 95% UPL	0.69	6
				Background	12/12 (100%)	--	0.30 - 0.69								
			Sodium (mg/kg)	Site	3/9 (33.3%)	600 - 1,400	190 - 390	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	430	0
				Background	5/12 (41.7%)	930 - 1,200	290 - 400								
			Thallium (mg/kg)	Site	7/9 (77.8%)	6.7 - 7.7	0.38 - 2.4	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	2.4	0
				Background	11/12 (91.7%)	6.0	0.70 - 2.4								
			Vanadium (mg/kg)	Site	9/9 (100%)	--	8.4 - 54	WMW Test (w/out NDs)	34	31	0.083	Yes	Normal 95% UPL(t)	37	1
				Background	12/12 (100%)	--	22 - 34								
			Zinc (mg/kg)	Site	9/9 (100%)	--	53 - 7,100	WMW Test (w/out NDs)	96	31	0.999	Yes	Normal 95% UPL(t)	240	8
				Background	12/12 (100%)	--	160 - 230								
		Metals-SPLP	Arsenic (mg/L)	Site	4/6 (66.7%)	0.0028 - 0.0033	0.0059 - 0.014	N/A	--	--	--	--	Maximum Detect	0.0053	4
				Background	3/5 (60.0%)	0.0027 - 0.0027	0.0028 - 0.0053								
			Barium (mg/L)	Site	6/6 (100%)	--	0.034 - 0.061	N/A	--	--	--	--	Maximum Detect	0.079	0
				Background	5/5 (100%)	--	0.048 - 0.079								
			Cadmium (mg/L)	Site	5/6 (83.3%)	0.00020	0.00026 - 0.015	N/A	--	--	--	--	--	--	5
				Background	0/5 (0.0%)	0.00020 - 0.00020	--								
			Chromium (mg/L)	Site	3/6 (50.0%)	0.010 - 0.010	0.0054 - 0.0087	N/A	--	--	--	--	Maximum Detect	0.019	0
				Background	5/5 (100%)	--	0.0090 - 0.019								
			Lead (mg/L)	Site	5/6 (83.3%)	0.0031	0.0022 - 0.13	N/A	--	--	--	--	--	--	5
				Background	0/5 (0.0%)	0.0052 - 0.015	--								
			Mercury (mg/L)	Site	0/6 (0.0%)	0.00010 - 0.00010	--	N/A	--	--	--	--	--	--	0
				Background	0/5 (0.0%)	0.00010 - 0.00010	--								
			Selenium (mg/L)	Site	1/2 (50.0%)	0.0027	0.0051	N/A	--	--	--	--	--	--	1
				Background	0/5 (0.0%)	0.0029 - 0.0029	--								
			Silver (mg/L)	Site	2/6 (33.3%)	0.00070 - 0.0012	0.00073 - 0.0013	N/A	--	--	--	--	--	--	2
				Background	0/5 (0.0%)	0.00050 - 0.00050	--								
		Miscellaneous	Total Organic Carbon (mg/kg)	Site	9/9 (100%)	--	7,000 - 86,000	WMW Test (w/out NDs)	64	31	0.772	Yes	Nonparametric 95% UPL	36,000	2
				Background	12/12 (100%)	--	19,000 - 36,000								
			Total Organic Carbon (mg/kg)	Site	9/9 (100%)	--	7,000 - 86,000	WMW Test (w/out NDs)	62	28	0.838	Yes	Nonparametric 95% UPL	33,000	3
			No Outliers	Background	11/11 (100%)	--	19,000 - 33,000								
		Miscellaneous-SPLP	Ammonia (mg/L)	Site	1/1 (100%)	--	0.18	N/A	--	--	--	--	Maximum Detect	2.4	0
				Background	5/5 (100%)	--	0.36 - 2.4								
			Fluoride (mg/L)	Site	1/6 (16.7%)	0.20 - 0.20	0.15	N/A	--	--	--	--	Maximum Detect	0.18	0
				Background	1/6 (16.7%)	0.20 - 0.20	0.18								
		PCBs	Aroclor 1016 (mg/kg)	Site	0/6 (0.0%)	0.017 - 0.045	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	0.024 - 0.031	--								
			Aroclor 1221 (mg/kg)	Site	0/6 (0.0%)	0.024 - 0.092	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	0.034 - 0.044	--								
			Aroclor 1232 (mg/kg)	Site	0/6 (0.0%)	0.012 - 0.045	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	0.017 - 0.022	--								
			Aroclor 1242 (mg/kg)	Site	0/6 (0.0%)	0.012 - 0.045	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	0.017 - 0.022	--								
			Aroclor 1248 (mg/kg)	Site	0/6 (0.0%)	0.012 - 0.045	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	0.017 - 0.022	--								
			Aroclor 1254 (mg/kg)	Site	2/6 (33.3%)	0.043 - 0.044	0.023 - 0.11	N/A	--	--	--	--	Maximum Detect	0.068	1
				Background	2/6 (33.3%)	0.017 - 0.022	0.053 - 0.068								
			Aroclor 1260 (mg/kg)	Site	0/6 (0.0%)	0.012 - 0.045	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	0.017 - 0.022	--								
			Total PCBs (mg/kg)	Site	2/6 (33.3%)	0.087 - 0.089	0.023 - 0.11	N/A	--	--	--	--	Maximum Detect	0.068	1
				Background	2/6 (33.3%)	0.034 - 0.044	0.053 - 0.068								

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								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Village Park Recreational User 1B	Surface Sediment	Pesticides/Herbicides	4,4'-DDD (ug/kg)	Site	2/6 (33.3%)	2.3 - 4.4	4.2 - 11	N/A	--	--	--	--	--	--	2
				Background	0/6 (0.0%)	2.9 - 4.2	--								
			4,4'-DDE (ug/kg)	Site	3/6 (50.0%)	4.3 - 4.4	2.9 - 15	N/A	--	--	--	--	Maximum Detect	7.2	1
				Background	6/6 (100%)	--	2.3 - 7.2								
			4,4'-DDT (ug/kg)	Site	1/6 (16.7%)	2.3 - 4.5	2.2	N/A	--	--	--	--	Maximum Detect	6.2	0
				Background	6/6 (100%)	--	2.7 - 6.2								
			Aldrin (ug/kg)	Site	0/6 (0.0%)	1.2 - 2.3	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	1.7 - 2.2	--								
			Alpha-BHC (ug/kg)	Site	1/6 (16.7%)	1.2 - 2.3	0.76	N/A	--	--	--	--	--	--	1
				Background	0/6 (0.0%)	1.7 - 2.2	--								
			Alpha-Chlordane (ug/kg)	Site	1/6 (16.7%)	1.2 - 2.3	4.5	N/A	--	--	--	--	Maximum Detect	0.71	1
				Background	5/6 (83.3%)	2.0	0.46 - 0.71								
			Beta-BHC (ug/kg)	Site	0/5 (0.0%)	0.59 - 2.3	--	N/A	--	--	--	--	Maximum Detect	1.9	0
				Background	5/6 (83.3%)	0.97	0.58 - 1.9								
			delta-BHC (ug/kg)	Site	0/6 (0.0%)	1.2 - 2.3	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	1.7 - 2.2	--								
			Dieldrin (ug/kg)	Site	0/6 (0.0%)	2.3 - 4.5	--	N/A	--	--	--	--	Maximum Detect	3.9	0
				Background	6/6 (100%)	--	2.0 - 3.9								
			Endosulfan I (ug/kg)	Site	0/6 (0.0%)	1.2 - 2.3	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	1.7 - 2.2	--								
			Endosulfan II (ug/kg)	Site	0/6 (0.0%)	2.3 - 4.5	--	N/A	--	--	--	--	Maximum Detect	1.4	0
				Background	1/6 (16.7%)	3.3 - 4.2	1.4								
			Endosulfan sulfate (ug/kg)	Site	0/6 (0.0%)	2.3 - 4.5	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	3.3 - 4.2	--								
			Endrin (ug/kg)	Site	0/6 (0.0%)	2.3 - 4.5	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	3.3 - 4.2	--								
			Endrin aldehyde (ug/kg)	Site	0/6 (0.0%)	2.3 - 4.5	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	3.3 - 4.2	--								
			Endrin ketone (ug/kg)	Site	0/6 (0.0%)	2.3 - 4.5	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	3.3 - 4.2	--								
			gamma-BHC (Lindane) (ug/kg)	Site	0/6 (0.0%)	1.2 - 2.3	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	1.7 - 2.2	--								
			gamma-Chlordane (ug/kg)	Site	2/6 (33.3%)	2.2 - 2.3	1.9 - 6.5	N/A	--	--	--	--	Maximum Detect	7.5	0
				Background	6/6 (100%)	--	4.2 - 7.5								
			Heptachlor (ug/kg)	Site	0/6 (0.0%)	1.2 - 2.3	--	N/A	--	--	--	--	Maximum Detect	0.68	0
				Background	3/6 (50.0%)	1.8 - 1.9	0.51 - 0.68								
			Heptachlor epoxide (ug/kg)	Site	2/6 (33.3%)	2.2 - 2.3	0.63 - 0.72	N/A	--	--	--	--	Maximum Detect	3.1	0
				Background	2/6 (33.3%)	1.9 - 2.2	2.3 - 3.1								
			Methoxychlor (ug/kg)	Site	0/6 (0.0%)	12 - 23	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	17 - 22	--								
			Toxaphene (ug/kg)	Site	0/6 (0.0%)	58 - 230	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	83 - 110	--								
		SVOCs	1-Methylnaphthalene (mg/kg)	Site	5/6 (83.3%)	0.0055	0.00098 - 0.70	N/A	--	--	--	--	Maximum Detect	0.0079	3
				Background	6/6 (100%)	--	0.0038 - 0.0079								
			2-Methylnaphthalene (mg/kg)	Site	5/6 (83.3%)	0.0055	0.0013 - 1.0	N/A	--	--	--	--	Maximum Detect	0.016	2
				Background	6/6 (100%)	--	0.0065 - 0.016								
			Acenaphthene (mg/kg)	Site	5/6 (83.3%)	0.0055	0.0017 - 2.3	N/A	--	--	--	--	Maximum Detect	0.015	3
				Background	6/6 (100%)	--	0.0061 - 0.015								
			Acenaphthylene (mg/kg)	Site	6/6 (100%)	--	0.00093 - 0.28	N/A	--	--	--	--	Maximum Detect	0.083	1
				Background	6/6 (100%)	--	0.031 - 0.083								
			Anthracene (mg/kg)	Site	6/6 (100%)	--	0.0029 - 3.2	N/A	--	--	--	--	Maximum Detect	0.078	2
				Background	6/6 (100%)	--	0.026 - 0.078								
			Benzo(a)anthracene (mg/kg)	Site	6/6 (100%)	--	0.0095 - 4.0	N/A	--	--	--	--	Maximum Detect	0.23	2
				Background	6/6 (100%)	--	0.083 - 0.23								
			Benzo(a)pyrene (mg/kg)	Site	6/6 (100%)	--	0.0069 - 3.4	N/A	--	--	--	--	Maximum Detect	0.43	1
				Background	6/6 (100%)	--	0.12 - 0.43								
			Benzo(b)fluoranthene (mg/kg)	Site	6/6 (100%)	--	0.0070 - 2.8	N/A	--	--	--	--	Maximum Detect	0.41	1
				Background	6/6 (100%)	--	0.15 - 0.41								
			Benzo(g,h,i)perylene (mg/kg)	Site	6/6 (100%)	--	0.0031 - 1.2	N/A	--	--	--	--	Maximum Detect	0.38	1
				Background	6/6 (100%)	--	0.12 - 0.38								

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DePue Lake, DePue, Illinois

								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Village Park Recreational User 1B	Surface Sediment	SVOCs	Benzo(k)fluoranthene (mg/kg)	Site	6/6 (100%)	--	0.0069 - 3.0	N/A	--	--	--	--	Maximum Detect	0.39	1
				Background	6/6 (100%)	--	0.10 - 0.39								
			Chrysene (mg/kg)	Site	6/6 (100%)	--	0.0085 - 3.5	N/A	--	--	--	--	Maximum Detect	0.42	2
				Background	6/6 (100%)	--	0.11 - 0.42								
			Dibenz(a,h)anthracene (mg/kg)	Site	6/6 (100%)	--	0.0012 - 0.55	N/A	--	--	--	--	Maximum Detect	0.083	1
				Background	6/6 (100%)	--	0.033 - 0.083								
			Fluoranthene (mg/kg)	Site	6/6 (100%)	--	0.021 - 11	N/A	--	--	--	--	Maximum Detect	0.52	2
				Background	6/6 (100%)	--	0.14 - 0.52								
			Fluorene (mg/kg)	Site	6/6 (100%)	--	0.00090 - 2.2	N/A	--	--	--	--	Maximum Detect	0.023	2
				Background	6/6 (100%)	--	0.010 - 0.023								
			Indeno(1,2,3-cd)pyrene (mg/kg)	Site	6/6 (100%)	--	0.0041 - 1.7	N/A	--	--	--	--	Maximum Detect	0.42	1
				Background	6/6 (100%)	--	0.13 - 0.42								
			Naphthalene (mg/kg)	Site	5/6 (83.3%)	0.0055	0.0012 - 2.1	N/A	--	--	--	--	Maximum Detect	0.026	1
				Background	6/6 (100%)	--	0.0093 - 0.026								
			Phenanthrene (mg/kg)	Site	6/6 (100%)	--	0.0099 - 14	N/A	--	--	--	--	Maximum Detect	0.11	3
				Background	6/6 (100%)	--	0.046 - 0.11								
			Pyrene (mg/kg)	Site	6/6 (100%)	--	0.017 - 8.5	N/A	--	--	--	--	Maximum Detect	0.64	2
				Background	6/6 (100%)	--	0.18 - 0.64								
			Total PAHs (mg/kg)	Site	6/6 (100%)	--	0.10 - 65	N/A	--	--	--	--	Maximum Detect	4.3	2
				Background	6/6 (100%)	--	1.3 - 4.3								
	Depth-weighted Sediment	Metals	Aluminum (mg/kg)	Site	5/5 (100%)	--	3,400 - 17,000	N/A	--	--	--	--	Normal 95% UPL(t)	21,000	0
				Background	12/12 (100%)	--	14,000 - 21,000								
			Antimony (mg/kg)	Site	1/4 (25.0%)	8.0 - 8.7	7.6	N/A	--	--	--	--	Maximum Detect	6.6	1
				Background	2/11 (18.2%)	11 - 14	5.0 - 6.6								
			Arsenic (mg/kg)	Site	5/5 (100%)	--	10 - 13	N/A	--	--	--	--	Normal 95% UPL(t)	9.5	5
				Background	12/12 (100%)	--	8.0 - 9.5								
			Barium (mg/kg)	Site	5/5 (100%)	--	180 - 940	N/A	--	--	--	--	Normal 95% UPL(t)	180	4
				Background	12/12 (100%)	--	150 - 180								
			Beryllium (mg/kg)	Site	5/5 (100%)	--	0.38 - 0.86	N/A	--	--	--	--	Normal 95% UPL(t)	1.1	0
				Background	12/12 (100%)	--	0.82 - 1.1								
			Cadmium (mg/kg)	Site	5/5 (100%)	--	10 - 90	N/A	--	--	--	--	Normal 95% UPL(t)	5.3	5
				Background	12/12 (100%)	--	1.8 - 4.9								
			Calcium (mg/kg)	Site	5/5 (100%)	--	23,000 - 38,000	N/A	--	--	--	--	Normal 95% UPL(t)	31,000	1
				Background	12/12 (100%)	--	23,000 - 31,000								
			Chromium (mg/kg)	Site	5/5 (100%)	--	11 - 44	N/A	--	--	--	--	Normal 95% UPL(t)	64	0
				Background	12/12 (100%)	--	39 - 63								
			Cobalt (mg/kg)	Site	5/5 (100%)	--	4.7 - 16	N/A	--	--	--	--	Normal 95% UPL(t)	11	2
				Background	12/12 (100%)	--	8.5 - 11								
			Copper (mg/kg)	Site	5/5 (100%)	--	45 - 210	N/A	--	--	--	--	Normal 95% UPL(t)	58	4
				Background	12/12 (100%)	--	36 - 56								
			Cyanide (mg/kg)	Site	1/1 (100%)	--	0.81	N/A	--	--	--	--	--	--	1
				Background	0/1 (0.0%)	5.2	--								
			Iron (mg/kg)	Site	5/5 (100%)	--	11,000 - 27,000	N/A	--	--	--	--	Normal 95% UPL(t)	30,000	0
				Background	12/12 (100%)	--	23,000 - 30,000								
			Lead (mg/kg)	Site	5/5 (100%)	--	88 - 340	N/A	--	--	--	--	Normal 95% UPL(t)	63	5
				Background	12/12 (100%)	--	34 - 58								
			Magnesium (mg/kg)	Site	5/5 (100%)	--	9,700 - 16,000	N/A	--	--	--	--	Normal 95% UPL(t)	10,000	4
				Background	12/12 (100%)	--	8,800 - 10,000								
			Manganese (mg/kg)	Site	5/5 (100%)	--	350 - 930	N/A	--	--	--	--	Normal 95% UPL(t)	720	1
				Background	12/12 (100%)	--	540 - 710								
			Mercury (mg/kg)	Site	5/5 (100%)	--	0.16 - 1.3	N/A	--	--	--	--	Normal 95% UPL(t)	0.36	2
				Background	12/12 (100%)	--	0.16 - 0.34								
			Nickel (mg/kg)	Site	5/5 (100%)	--	13 - 36	N/A	--	--	--	--	Normal 95% UPL(t)	49	0
				Background	12/12 (100%)	--	34 - 50								
			Potassium (mg/kg)	Site	5/5 (100%)	--	450 - 2,400	N/A	--	--	--	--	Normal 95% UPL(t)	3,100	0
				Background	12/12 (100%)	--	2,000 - 3,100								
			Selenium (mg/kg)	Site	4/5 (80.0%)	4.8	2.5 - 5.4	N/A	--	--	--	--	--	--	4
				Background	0/12 (0.0%)	5.7 - 8.4	--								
			Silver (mg/kg)	Site	5/5 (100%)	--	1.3 - 2.5	N/A	--	--	--	--	WH Gamma 95% UPL	1.5	4
				Background	12/12 (100%)	--	0.30 - 1.1								
			Sodium (mg/kg)	Site	3/5 (60.0%)	780 - 1,000	430 - 480	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	850	0
				Background	5/12 (41.7%)	910 - 1,100	240 - 760								
			Thallium (mg/kg)	Site	4/5 (80.0%)	5.0	0.66 - 2.7	N/A	--	--	--	--	HW Gamma 95% UPL	3.0	0
				Background	12/12 (100%)	--	0.99 - 3.3								
			Vanadium (mg/kg)	Site	5/5 (100%)	--	14 - 33	N/A	--	--	--	--	Normal 95% UPL(t)	39	0
				Background	12/12 (100%)	--	26 - 38								

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								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Village Park Recreational User 1B	Depth-weighted Sediment	Metals	Vanadium (mg/kg)	Site	5/5 (100%)	--	14 - 33	N/A	--	--	--	--	Normal 95% UPL(t)	37	0
			No Outliers	Background	11/11 (100%)	--	26 - 37								
			Zinc (mg/kg)	Site	5/5 (100%)	--	1,900 - 6,700	N/A	--	--	--	--	Normal 95% UPL(t)	320	5
				Background	12/12 (100%)	--	170 - 300								
		Miscellaneous	Total Organic Carbon (mg/kg)	Site	5/5 (100%)	--	21,000 - 52,000	N/A	--	--	--	--	Nonparametric 95% UPL	37,000	3
				Background	12/12 (100%)	--	20,000 - 37,000								
			Total Organic Carbon (mg/kg)	Site	5/5 (100%)	--	21,000 - 52,000	N/A	--	--	--	--	Normal 95% UPL(t)	25,000	4
			No Outliers	Background	10/10 (100%)	--	20,000 - 25,000								
		Miscellaneous-SPLP	Fluoride (mg/L)	Site	0/1 (0.0%)	0.20	--	N/A	--	--	--	--	Maximum Detect	0.29	0
				Background	1/1 (100%)	--	0.29								
		PCBs	Aroclor 1016 (mg/kg)	Site	0/1 (0.0%)	0.046	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	0.026	--								
			Aroclor 1221 (mg/kg)	Site	0/1 (0.0%)	0.092	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	0.036	--								
			Aroclor 1232 (mg/kg)	Site	0/1 (0.0%)	0.046	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	0.018	--								
			Aroclor 1242 (mg/kg)	Site	0/1 (0.0%)	0.046	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	0.018	--								
			Aroclor 1248 (mg/kg)	Site	0/1 (0.0%)	0.046	--	N/A	--	--	--	--	Maximum Detect	0.10	0
				Background	1/1 (100%)	--	0.10								
			Aroclor 1254 (mg/kg)	Site	1/1 (100%)	--	0.062	N/A	--	--	--	--	Maximum Detect	0.087	0
				Background	1/1 (100%)	--	0.087								
			Aroclor 1260 (mg/kg)	Site	0/1 (0.0%)	0.046	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	0.018	--								
			Total PCBs (mg/kg)	Site	1/1 (100%)	--	0.088	N/A	--	--	--	--	Maximum Detect	0.18	0
				Background	1/1 (100%)	--	0.18								
		Pesticides/Herbicides	4,4'-DDD (ug/kg)	Site	1/1 (100%)	--	10	N/A	--	--	--	--	Maximum Detect	3.3	1
				Background	1/1 (100%)	--	3.3								
			4,4'-DDE (ug/kg)	Site	1/1 (100%)	--	9.1	N/A	--	--	--	--	Maximum Detect	8.6	1
				Background	1/1 (100%)	--	8.6								
			4,4'-DDT (ug/kg)	Site	1/1 (100%)	--	4.0	N/A	--	--	--	--	Maximum Detect	5.7	0
				Background	1/1 (100%)	--	5.7								
			Aldrin (ug/kg)	Site	0/1 (0.0%)	2.4	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	1.8	--								
			Alpha-BHC (ug/kg)	Site	0/1 (0.0%)	2.4	--	N/A	--	--	--	--	Maximum Detect	2.0	0
				Background	1/1 (100%)	--	2.0								
			Alpha-Chlordane (ug/kg)	Site	1/1 (100%)	--	1.8	N/A	--	--	--	--	Maximum Detect	1.2	1
				Background	1/1 (100%)	--	1.2								
			Beta-BHC (ug/kg)	Site	0/1 (0.0%)	2.4	--	N/A	--	--	--	--	Maximum Detect	1.7	0
				Background	1/1 (100%)	--	1.7								
			delta-BHC (ug/kg)	Site	1/1 (100%)	--	0.99	N/A	--	--	--	--	--	--	1
				Background	0/1 (0.0%)	1.8	--								
			Dieldrin (ug/kg)	Site	0/1 (0.0%)	4.6	--	N/A	--	--	--	--	Maximum Detect	4.9	0
				Background	1/1 (100%)	--	4.9								
			Endosulfan I (ug/kg)	Site	0/1 (0.0%)	2.4	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	1.8	--								
			Endosulfan II (ug/kg)	Site	0/1 (0.0%)	4.6	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	3.5	--								
			Endosulfan sulfate (ug/kg)	Site	0/1 (0.0%)	4.6	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	3.5	--								
			Endrin (ug/kg)	Site	0/1 (0.0%)	4.6	--	N/A	--	--	--	--	Maximum Detect	3.1	0
				Background	1/1 (100%)	--	3.1								
			Endrin aldehyde (ug/kg)	Site	0/1 (0.0%)	4.6	--	N/A	--	--	--	--	Maximum Detect	3.1	0
				Background	1/1 (100%)	--	3.1								
			Endrin ketone (ug/kg)	Site	1/1 (100%)	--	4.0	N/A	--	--	--	--	--	--	1
				Background	0/1 (0.0%)	3.5	--								
			gamma-BHC (Lindane) (ug/kg)	Site	0/1 (0.0%)	2.4	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	1.8	--								
			gamma-Chlordane (ug/kg)	Site	1/1 (100%)	--	3.0	N/A	--	--	--	--	Maximum Detect	5.5	0
				Background	1/1 (100%)	--	5.5								
			Heptachlor (ug/kg)	Site	0/1 (0.0%)	2.4	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	1.8	--								
			Heptachlor epoxide (ug/kg)	Site	1/1 (100%)	--	2.2	N/A	--	--	--	--	Maximum Detect	4.2	0
				Background	1/1 (100%)	--	4.2								

Table A-2
Hypothesis Testing and Background Screening Levels - Sediment
OU5 Baseline Human Health Risk Assessment
DePue Lake, DePue, Illinois

								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Village Park Recreational User 1B	Depth-weighted Sediment	Pesticides/Herbicides	Methoxychlor (ug/kg)	Site	0/1 (0.0%)	24	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	18	--								
			Toxaphene (ug/kg)	Site	0/1 (0.0%)	240	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	88	--								
		SVOCs	1-Methylnaphthalene (mg/kg)	Site	1/1 (100%)	--	0.22	N/A	--	--	--	--	Maximum Detect	0.0057	1
				Background	1/1 (100%)	--	0.0057								
			2-Methylnaphthalene (mg/kg)	Site	1/1 (100%)	--	0.31	N/A	--	--	--	--	Maximum Detect	0.014	1
				Background	1/1 (100%)	--	0.014								
			Acenaphthene (mg/kg)	Site	1/1 (100%)	--	0.67	N/A	--	--	--	--	Maximum Detect	0.016	1
				Background	1/1 (100%)	--	0.016								
			Acenaphthylene (mg/kg)	Site	1/1 (100%)	--	0.12	N/A	--	--	--	--	Maximum Detect	0.088	1
				Background	1/1 (100%)	--	0.088								
			Anthracene (mg/kg)	Site	1/1 (100%)	--	0.99	N/A	--	--	--	--	Maximum Detect	0.086	1
				Background	1/1 (100%)	--	0.086								
			Benzo(a)anthracene (mg/kg)	Site	1/1 (100%)	--	1.4	N/A	--	--	--	--	Maximum Detect	0.21	1
				Background	1/1 (100%)	--	0.21								
			Benzo(a)pyrene (mg/kg)	Site	1/1 (100%)	--	1.2	N/A	--	--	--	--	Maximum Detect	0.23	1
				Background	1/1 (100%)	--	0.23								
			Benzo(b)fluoranthene (mg/kg)	Site	1/1 (100%)	--	1.0	N/A	--	--	--	--	Maximum Detect	0.23	1
				Background	1/1 (100%)	--	0.23								
			Benzo(g,h,i)perylene (mg/kg)	Site	1/1 (100%)	--	0.47	N/A	--	--	--	--	Maximum Detect	0.20	1
				Background	1/1 (100%)	--	0.20								
			Benzo(k)fluoranthene (mg/kg)	Site	1/1 (100%)	--	1.1	N/A	--	--	--	--	Maximum Detect	0.21	1
				Background	1/1 (100%)	--	0.21								
			Chrysene (mg/kg)	Site	1/1 (100%)	--	1.3	N/A	--	--	--	--	Maximum Detect	0.25	1
				Background	1/1 (100%)	--	0.25								
			Dibenz(a,h)anthracene (mg/kg)	Site	1/1 (100%)	--	0.20	N/A	--	--	--	--	Maximum Detect	0.062	1
				Background	1/1 (100%)	--	0.062								
			Fluoranthene (mg/kg)	Site	1/1 (100%)	--	3.7	N/A	--	--	--	--	Maximum Detect	0.31	1
				Background	1/1 (100%)	--	0.31								
			Fluorene (mg/kg)	Site	1/1 (100%)	--	0.65	N/A	--	--	--	--	Maximum Detect	0.030	1
				Background	1/1 (100%)	--	0.030								
			Indeno(1,2,3-cd)pyrene (mg/kg)	Site	1/1 (100%)	--	0.63	N/A	--	--	--	--	Maximum Detect	0.22	1
				Background	1/1 (100%)	--	0.22								
			Naphthalene (mg/kg)	Site	1/1 (100%)	--	0.61	N/A	--	--	--	--	Maximum Detect	0.020	1
				Background	1/1 (100%)	--	0.020								
			Phenanthrene (mg/kg)	Site	1/1 (100%)	--	4.3	N/A	--	--	--	--	Maximum Detect	0.10	1
				Background	1/1 (100%)	--	0.10								
			Pyrene (mg/kg)	Site	1/1 (100%)	--	3.0	N/A	--	--	--	--	Maximum Detect	0.39	1
				Background	1/1 (100%)	--	0.39								
			Total PAHs (mg/kg)	Site	1/1 (100%)	--	22	N/A	--	--	--	--	Maximum Detect	2.7	1
				Background	1/1 (100%)	--	2.7								
Wildlife Workers & Hunters (2)	Surface Sediment	Metals	Aluminum (mg/kg)	Site	40/40 (100%)	--	1,000 - 23,000	WMW Test (w/out NDs)	-1.39	-1.645	0.082	Yes	Normal 95% UPL(t)	21,000	1
				Background	12/12 (100%)	--	12,000 - 20,000								
			Antimony (mg/kg)	Site	2/20 (10.0%)	7.0 - 17	0.64 - 1.1	N/A	--	--	--	--	Maximum Detect	1.8	0
				Background	2/11 (18.2%)	11 - 17	0.86 - 1.8								
			Arsenic (mg/kg)	Site	40/40 (100%)	--	2.4 - 12	WMW Test (w/out NDs)	2.313	-1.645	0.99	Yes	Nonparametric 95% UPL	7.3	28
				Background	12/12 (100%)	--	4.9 - 7.3								
			Barium (mg/kg)	Site	40/40 (100%)	--	50 - 1,300	WMW Test (w/out NDs)	113	68	31	Yes	Normal 95% UPL(t)	170	16
				Background	12/12 (100%)	--	110 - 160								
			Beryllium (mg/kg)	Site	40/40 (100%)	--	0.14 - 1.2	WMW Test (w/out NDs)	0.109	-1.645	0.543	Yes	Normal 95% UPL(t)	1.0	1
				Background	12/12 (100%)	--	0.63 - 1.0								
			Cadmium (mg/kg)	Site	40/40 (100%)	--	1.3 - 37	WMW Test (w/out NDs)	4.648	-1.645	1	Yes	Normal 95% UPL(t)	2.7	37
				Background	12/12 (100%)	--	1.4 - 2.5								
			Calcium (mg/kg)	Site	40/40 (100%)	--	11,000 - 49,000	WMW Test (w/out NDs)	0.315	-1.645	0.624	Yes	Normal 95% UPL(t)	43,000	9
				Background	12/12 (100%)	--	31,000 - 43,000								
			Chromium (mg/kg)	Site	40/40 (100%)	--	3.3 - 62	WMW Test (w/out NDs)	1.347	-1.645	0.911	Yes	Normal 95% UPL(t)	46	9
				Background	12/12 (100%)	--	32 - 44								
			Cobalt (mg/kg)	Site	40/40 (100%)	--	1.8 - 16	WMW Test (w/out NDs)	3.562	-1.645	1	Yes	Normal 95% UPL(t)	11	28
				Background	12/12 (100%)	--	7.0 - 10								
			Copper (mg/kg)	Site	40/40 (100%)	--	11 - 150	WMW Test (w/out NDs)	4.235	-1.645	1	Yes	Normal 95% UPL(t)	47	34
				Background	12/12 (100%)	--	34 - 47								
			Cyanide (mg/kg)	Site	1/9 (11.1%)	0.35 - 7.0	0.58	N/A	--	--	--	--	--	--	1
				Background	0/6 (0.0%)	4.9 - 6.3	--								
			Iron (mg/kg)	Site	40/40 (100%)	--	4,500 - 36,000	WMW Test (w/out NDs)	0.945	-1.645	0.828	Yes	Normal 95% UPL(t)	30,000	3
				Background	12/12 (100%)	--	19,000 - 29,000								

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DePue Lake, DePue, Illinois

								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Wildlife Workers & Hunters (2)	Surface Sediment	Metals	Lead (mg/kg)	Site	40/40 (100%)	--	17 - 120	WMW Test (w/out NDs)	4.029	-1.645	1	Yes	Normal 95% UPL(t)	44	27
				Background	12/12 (100%)	--	30 - 44								
			Magnesium (mg/kg)	Site	40/40 (100%)	--	6,000 - 24,000	WMW Test (w/out NDs)	1.531	-1.645	0.937	Yes	Normal 95% UPL(t)	12,000	13
				Background	12/12 (100%)	--	9,900 - 12,000								
			Manganese (mg/kg)	Site	40/40 (100%)	--	310 - 920	WMW Test (w/out NDs)	0.337	-1.645	0.632	Yes	WH Gamma 95% UPL	790	15
				Background	12/12 (100%)	--	480 - 730								
			Mercury (mg/kg)	Site	30/40 (75.0%)	0.12 - 0.36	0.099 - 0.56	Gehan Test	1.944	-1.645	0.974	Yes	Normal 95% UPL(t)	0.26	11
				Background	12/12 (100%)	--	0.12 - 0.27								
			Nickel (mg/kg)	Site	39/40 (97.5%)	4.6	12 - 51	Gehan Test	0.76	-1.645	0.776	Yes	Normal 95% UPL(t)	38	7
				Background	12/12 (100%)	--	23 - 39								
			Potassium (mg/kg)	Site	40/40 (100%)	--	160 - 3,200	WMW Test (w/out NDs)	-1.759	-1.645	< 0.05	No	Normal 95% UPL(t)	3,500	0
				Background	12/12 (100%)	--	2,100 - 3,300								
			Selenium (mg/kg)	Site	17/40 (42.5%)	4.1 - 11	0.35 - 1.4	N/A	--	--	--	--	--	--	17
				Background	0/12 (0.0%)	6.1 - 10	--								
			Silver (mg/kg)	Site	40/40 (100%)	--	0.056 - 1.2	WMW Test (w/out NDs)	4.029	-1.645	1	Yes	Nonparametric 95% UPL	0.69	31
				Background	12/12 (100%)	--	0.30 - 0.69								
			Sodium (mg/kg)	Site	8/40 (20.0%)	580 - 1,400	220 - 400	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	430	0
				Background	5/12 (41.7%)	930 - 1,200	290 - 400								
			Thallium (mg/kg)	Site	11/40 (27.5%)	3.4 - 7.1	0.36 - 1.9	Gehan Test	-3.357	-1.645	< 0.05	No	95% Kaplan-Meier UPL(t)	2.4	0
				Background	11/12 (91.7%)	6.0	0.70 - 2.4								
			Vanadium (mg/kg)	Site	40/40 (100%)	--	5.4 - 42	WMW Test (w/out NDs)	-0.565	-1.645	0.286	Yes	Normal 95% UPL(t)	37	1
				Background	12/12 (100%)	--	22 - 34								
			Zinc (mg/kg)	Site	40/40 (100%)	--	180 - 3,100	WMW Test (w/out NDs)	5.028	-1.645	1	Yes	Normal 95% UPL(t)	240	39
				Background	12/12 (100%)	--	160 - 230								
		Metals-SPLP	Arsenic (mg/L)	Site	0/8 (0.0%)	0.0028 - 0.0028	--	N/A	--	--	--	--	Maximum Detect	0.0053	0
				Background	3/5 (60.0%)	0.0027 - 0.0027	0.0028 - 0.0053								
			Barium (mg/L)	Site	8/8 (100%)	--	0.019 - 0.036	N/A	--	--	--	--	Maximum Detect	0.079	0
				Background	5/5 (100%)	--	0.048 - 0.079								
			Cadmium (mg/L)	Site	0/8 (0.0%)	0.00040 - 0.0050	--	N/A	--	--	--	--	--	--	0
				Background	0/5 (0.0%)	0.00020 - 0.00020	--								
			Chromium (mg/L)	Site	0/8 (0.0%)	0.010 - 0.010	--	N/A	--	--	--	--	Maximum Detect	0.019	0
				Background	5/5 (100%)	--	0.0090 - 0.019								
			Lead (mg/L)	Site	0/8 (0.0%)	0.0010 - 0.0032	--	N/A	--	--	--	--	--	--	0
				Background	0/5 (0.0%)	0.0052 - 0.015	--								
			Mercury (mg/L)	Site	0/8 (0.0%)	0.00010 - 0.00010	--	N/A	--	--	--	--	--	--	0
				Background	0/5 (0.0%)	0.00010 - 0.00010	--								
			Selenium (mg/L)	Site	0/8 (0.0%)	0.0027 - 0.0027	--	N/A	--	--	--	--	--	--	0
				Background	0/5 (0.0%)	0.0029 - 0.0029	--								
			Silver (mg/L)	Site	0/8 (0.0%)	0.0012 - 0.0012	--	N/A	--	--	--	--	--	--	0
				Background	0/5 (0.0%)	0.00050 - 0.00050	--								
		Miscellaneous	Total Carbon (mg/kg)	Site	6/6 (100%)	--	61,000 - 88,000	N/A	--	--	--	--	Maximum Detect	63,000	4
				Background	5/5 (100%)	--	44,000 - 63,000								
			Total Organic Carbon (mg/kg)	Site	40/40 (100%)	--	2,500 - 56,000	WMW Test (w/out NDs)	1.77	-1.645	0.962	Yes	Nonparametric 95% UPL	36,000	4
				Background	12/12 (100%)	--	19,000 - 36,000								
			Total Organic Carbon (mg/kg)	Site	40/40 (100%)	--	2,500 - 56,000	WMW Test (w/out NDs)	2.233	-1.645	0.987	Yes	Nonparametric 95% UPL	33,000	4
			No Outliers	Background	11/11 (100%)	--	19,000 - 33,000								
		Miscellaneous-SPLP	Ammonia (mg/L)	Site	8/8 (100%)	--	0.089 - 3.2	N/A	--	--	--	--	Maximum Detect	2.4	1
				Background	5/5 (100%)	--	0.36 - 2.4								
			Fluoride (mg/L)	Site	9/9 (100%)	--	0.10 - 0.27	N/A	--	--	--	--	Maximum Detect	0.18	6
				Background	1/6 (16.7%)	0.20 - 0.20	0.18								
		PCBs	Aroclor 1016 (mg/kg)	Site	0/9 (0.0%)	0.021 - 0.041	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	0.024 - 0.031	--								
			Aroclor 1221 (mg/kg)	Site	0/9 (0.0%)	0.030 - 0.059	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	0.034 - 0.044	--								
			Aroclor 1232 (mg/kg)	Site	0/9 (0.0%)	0.015 - 0.029	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	0.017 - 0.022	--								
			Aroclor 1242 (mg/kg)	Site	0/9 (0.0%)	0.015 - 0.029	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	0.017 - 0.022	--								
			Aroclor 1248 (mg/kg)	Site	0/9 (0.0%)	0.015 - 0.029	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	0.017 - 0.022	--								
			Aroclor 1254 (mg/kg)	Site	7/9 (77.8%)	0.015 - 0.019	0.021 - 0.095	N/A	--	--	--	--	Maximum Detect	0.068	3
				Background	2/6 (33.3%)	0.017 - 0.022	0.053 - 0.068								
			Aroclor 1260 (mg/kg)	Site	2/9 (22.2%)	0.015 - 0.029	0.033 - 0.034	N/A	--	--	--	--	--	--	2
				Background	0/6 (0.0%)	0.017 - 0.022	--								
			Total PCBs (mg/kg)	Site	8/9 (88.9%)	0.030	0.021 - 0.12	N/A	--	--	--	--	Maximum Detect	0.068	3
				Background	2/6 (33.3%)	0.034 - 0.044	0.053 - 0.068								

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								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Wildlife Workers & Hunters (2)	Surface Sediment	Pesticides/Herbicides	4,4'-DDD (ug/kg)	Site	4/9 (44.4%)	3.4 - 4.7	0.73 - 2.3	N/A	--	--	--	--	--	--	4
				Background	0/6 (0.0%)	2.9 - 4.2	--								
			4,4'-DDE (ug/kg)	Site	9/9 (100%)	--	2.2 - 11	N/A	--	--	--	--	Maximum Detect	7.2	4
				Background	6/6 (100%)	--	2.3 - 7.2								
			4,4'-DDT (ug/kg)	Site	1/9 (11.1%)	2.9 - 5.7	4.0	N/A	--	--	--	--	Maximum Detect	6.2	0
				Background	6/6 (100%)	--	2.7 - 6.2								
			Aldrin (ug/kg)	Site	2/9 (22.2%)	1.8 - 2.9	1.5 - 2.0	N/A	--	--	--	--	--	--	2
				Background	0/6 (0.0%)	1.7 - 2.2	--								
			Alpha-BHC (ug/kg)	Site	2/9 (22.2%)	1.5 - 2.7	0.77 - 0.98	N/A	--	--	--	--	--	--	2
				Background	0/6 (0.0%)	1.7 - 2.2	--								
			Alpha-Chlordane (ug/kg)	Site	2/9 (22.2%)	1.5 - 2.9	1.7 - 2.6	N/A	--	--	--	--	Maximum Detect	0.71	2
				Background	5/6 (83.3%)	2.0	0.46 - 0.71								
			Beta-BHC (ug/kg)	Site	6/9 (66.7%)	0.75 - 1.5	1.8 - 4.1	N/A	--	--	--	--	Maximum Detect	1.9	5
				Background	5/6 (83.3%)	0.97	0.58 - 1.9								
			delta-BHC (ug/kg)	Site	3/9 (33.3%)	1.5 - 2.4	0.85 - 12	N/A	--	--	--	--	--	--	3
				Background	0/6 (0.0%)	1.7 - 2.2	--								
			Dieldrin (ug/kg)	Site	4/9 (44.4%)	3.4 - 5.3	1.4 - 4.1	N/A	--	--	--	--	Maximum Detect	3.9	1
				Background	6/6 (100%)	--	2.0 - 3.9								
			Endosulfan I (ug/kg)	Site	0/9 (0.0%)	1.5 - 2.9	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	1.7 - 2.2	--								
			Endosulfan II (ug/kg)	Site	0/9 (0.0%)	2.9 - 5.7	--	N/A	--	--	--	--	Maximum Detect	1.4	0
				Background	1/6 (16.7%)	3.3 - 4.2	1.4								
			Endosulfan sulfate (ug/kg)	Site	0/9 (0.0%)	2.9 - 5.7	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	3.3 - 4.2	--								
			Endrin (ug/kg)	Site	1/9 (11.1%)	2.9 - 5.7	1.7	N/A	--	--	--	--	--	--	1
				Background	0/6 (0.0%)	3.3 - 4.2	--								
			Endrin aldehyde (ug/kg)	Site	4/9 (44.4%)	2.9 - 5.7	1.7 - 3.8	N/A	--	--	--	--	--	--	4
				Background	0/6 (0.0%)	3.3 - 4.2	--								
			Endrin ketone (ug/kg)	Site	0/9 (0.0%)	2.9 - 5.7	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	3.3 - 4.2	--								
			gamma-BHC (Lindane) (ug/kg)	Site	1/9 (11.1%)	1.5 - 2.7	4.9	N/A	--	--	--	--	--	--	1
				Background	0/6 (0.0%)	1.7 - 2.2	--								
			gamma-Chlordane (ug/kg)	Site	7/9 (77.8%)	1.8 - 2.1	2.4 - 12	N/A	--	--	--	--	Maximum Detect	7.5	6
				Background	6/6 (100%)	--	4.2 - 7.5								
			Heptachlor (ug/kg)	Site	2/9 (22.2%)	1.5 - 2.9	1.9 - 2.0	N/A	--	--	--	--	Maximum Detect	0.68	2
				Background	3/6 (50.0%)	1.8 - 1.9	0.51 - 0.68								
			Heptachlor epoxide (ug/kg)	Site	4/9 (44.4%)	1.8 - 2.9	0.79 - 3.6	N/A	--	--	--	--	Maximum Detect	3.1	1
				Background	2/6 (33.3%)	1.9 - 2.2	2.3 - 3.1								
			Methoxychlor (ug/kg)	Site	0/9 (0.0%)	15 - 29	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	17 - 22	--								
			Toxaphene (ug/kg)	Site	0/9 (0.0%)	73 - 140	--	N/A	--	--	--	--	--	--	0
				Background	0/6 (0.0%)	83 - 110	--								
		SVOCs	1-Methylnaphthalene (mg/kg)	Site	9/9 (100%)	--	0.0022 - 0.0079	N/A	--	--	--	--	Maximum Detect	0.0079	0
				Background	6/6 (100%)	--	0.0038 - 0.0079								
			2-Methylnaphthalene (mg/kg)	Site	9/9 (100%)	--	0.0035 - 0.016	N/A	--	--	--	--	Maximum Detect	0.016	0
				Background	6/6 (100%)	--	0.0065 - 0.016								
			Acenaphthene (mg/kg)	Site	9/9 (100%)	--	0.0035 - 0.018	N/A	--	--	--	--	Maximum Detect	0.015	1
				Background	6/6 (100%)	--	0.0061 - 0.015								
			Acenaphthylene (mg/kg)	Site	9/9 (100%)	--	0.0085 - 0.063	N/A	--	--	--	--	Maximum Detect	0.083	0
				Background	6/6 (100%)	--	0.031 - 0.083								
			Anthracene (mg/kg)	Site	9/9 (100%)	--	0.012 - 0.061	N/A	--	--	--	--	Maximum Detect	0.078	0
				Background	6/6 (100%)	--	0.026 - 0.078								
			Benzo(a)anthracene (mg/kg)	Site	9/9 (100%)	--	0.045 - 0.26	N/A	--	--	--	--	Maximum Detect	0.23	1
				Background	6/6 (100%)	--	0.083 - 0.23								
			Benzo(a)pyrene (mg/kg)	Site	9/9 (100%)	--	0.050 - 0.32	N/A	--	--	--	--	Maximum Detect	0.43	0
				Background	6/6 (100%)	--	0.12 - 0.43								
			Benzo(b)fluoranthene (mg/kg)	Site	9/9 (100%)	--	0.052 - 0.65	N/A	--	--	--	--	Maximum Detect	0.41	1
				Background	6/6 (100%)	--	0.15 - 0.41								
			Benzo(g,h,i)perylene (mg/kg)	Site	9/9 (100%)	--	0.040 - 0.28	N/A	--	--	--	--	Maximum Detect	0.38	0
				Background	6/6 (100%)	--	0.12 - 0.38								
			Benzo(k)fluoranthene (mg/kg)	Site	9/9 (100%)	--	0.053 - 0.51	N/A	--	--	--	--	Maximum Detect	0.39	1
				Background	6/6 (100%)	--	0.10 - 0.39								
			Chrysene (mg/kg)	Site	9/9 (100%)	--	0.056 - 0.37	N/A	--	--	--	--	Maximum Detect	0.42	0
				Background	6/6 (100%)	--	0.11 - 0.42								
			Dibenz(a,h)anthracene (mg/kg)	Site	9/9 (100%)	--	0.012 - 0.074	N/A	--	--	--	--	Maximum Detect	0.083	0
				Background	6/6 (100%)	--	0.033 - 0.083								

Table A-2
Hypothesis Testing and Background Screening Levels - Sediment
OU5 Baseline Human Health Risk Assessment
DePue Lake, DePue, Illinois

								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Wildlife Workers & Hunters (2)	Surface Sediment	SVOCs	Fluoranthene (mg/kg)	Site	9/9 (100%)	--	0.091 - 0.53	N/A	--	--	--	--	Maximum Detect	0.52	1
				Background	6/6 (100%)	--	0.14 - 0.52								
			Fluorene (mg/kg)	Site	9/9 (100%)	--	0.0052 - 0.022	N/A	--	--	--	--	Maximum Detect	0.023	0
				Background	6/6 (100%)	--	0.010 - 0.023								
			Indeno(1,2,3-cd)pyrene (mg/kg)	Site	9/9 (100%)	--	0.044 - 0.29	N/A	--	--	--	--	Maximum Detect	0.42	0
				Background	6/6 (100%)	--	0.13 - 0.42								
			Naphthalene (mg/kg)	Site	5/9 (55.6%)	0.014 - 0.024	0.012 - 0.014	N/A	--	--	--	--	Maximum Detect	0.026	0
				Background	6/6 (100%)	--	0.0093 - 0.026								
			Phenanthrene (mg/kg)	Site	9/9 (100%)	--	0.035 - 0.19	N/A	--	--	--	--	Maximum Detect	0.11	2
				Background	6/6 (100%)	--	0.046 - 0.11								
			Pyrene (mg/kg)	Site	9/9 (100%)	--	0.085 - 0.52	N/A	--	--	--	--	Maximum Detect	0.64	0
				Background	6/6 (100%)	--	0.18 - 0.64								
			Total PAHs (mg/kg)	Site	9/9 (100%)	--	0.60 - 4.2	N/A	--	--	--	--	Maximum Detect	4.3	0
				Background	6/6 (100%)	--	1.3 - 4.3								
	Depth-weighted Sediment	Metals	Aluminum (mg/kg)	Site	39/39 (100%)	--	4,400 - 21,000	WMW Test (w/out NDs)	-1.232	-1.645	0.109	Yes	Normal 95% UPL(t)	21,000	0
				Background	12/12 (100%)	--	14,000 - 21,000								
			Antimony (mg/kg)	Site	2/19 (10.5%)	3.9 - 16	4.2 - 10	N/A	--	--	--	--	Maximum Detect	6.6	1
				Background	2/11 (18.2%)	11 - 14	5.0 - 6.6								
			Arsenic (mg/kg)	Site	39/39 (100%)	--	4.6 - 13	WMW Test (w/out NDs)	0.588	-1.645	0.722	Yes	Normal 95% UPL(t)	9.5	13
				Background	12/12 (100%)	--	8.0 - 9.5								
			Barium (mg/kg)	Site	39/39 (100%)	--	100 - 1,500	WMW Test (w/out NDs)	2.098	-1.645	0.982	Yes	Normal 95% UPL(t)	180	19
				Background	12/12 (100%)	--	150 - 180								
			Beryllium (mg/kg)	Site	39/39 (100%)	--	0.33 - 1.1	WMW Test (w/out NDs)	-0.633	-1.645	0.263	Yes	Normal 95% UPL(t)	1.1	1
				Background	12/12 (100%)	--	0.82 - 1.1								
			Cadmium (mg/kg)	Site	39/39 (100%)	--	2.8 - 40	WMW Test (w/out NDs)	4.275	-1.645	1	Yes	Normal 95% UPL(t)	5.3	31
				Background	12/12 (100%)	--	1.8 - 4.9								
			Calcium (mg/kg)	Site	39/39 (100%)	--	9,600 - 40,000	WMW Test (w/out NDs)	-0.233	-1.645	0.408	Yes	Normal 95% UPL(t)	31,000	8
				Background	12/12 (100%)	--	23,000 - 31,000								
			Chromium (mg/kg)	Site	39/39 (100%)	--	11 - 65	WMW Test (w/out NDs)	-0.988	-1.645	0.162	Yes	Normal 95% UPL(t)	64	1
				Background	12/12 (100%)	--	39 - 63								
			Cobalt (mg/kg)	Site	39/39 (100%)	--	4.6 - 17	WMW Test (w/out NDs)	3.997	-1.645	1	Yes	Normal 95% UPL(t)	11	29
				Background	12/12 (100%)	--	8.5 - 11								
			Copper (mg/kg)	Site	39/39 (100%)	--	19 - 160	WMW Test (w/out NDs)	3.742	-1.645	1	Yes	Normal 95% UPL(t)	58	28
				Background	12/12 (100%)	--	36 - 56								
			Cyanide (mg/kg)	Site	1/1 (100%)	--	1.5	N/A	--	--	--	--	--	--	1
				Background	0/1 (0.0%)	5.2	--								
			Iron (mg/kg)	Site	39/39 (100%)	--	9,900 - 31,000	WMW Test (w/out NDs)	0.788	-1.645	0.785	Yes	Normal 95% UPL(t)	30,000	5
				Background	12/12 (100%)	--	23,000 - 30,000								
			Lead (mg/kg)	Site	39/39 (100%)	--	36 - 130	WMW Test (w/out NDs)	3.031	-1.645	0.999	Yes	Normal 95% UPL(t)	63	23
				Background	12/12 (100%)	--	34 - 58								
			Magnesium (mg/kg)	Site	39/39 (100%)	--	6,600 - 14,000	WMW Test (w/out NDs)	2.609	-1.645	0.995	Yes	Normal 95% UPL(t)	10,000	18
				Background	12/12 (100%)	--	8,800 - 10,000								
			Manganese (mg/kg)	Site	39/39 (100%)	--	340 - 910	WMW Test (w/out NDs)	0.855	-1.645	0.804	Yes	Normal 95% UPL(t)	720	10
				Background	12/12 (100%)	--	540 - 710								
			Mercury (mg/kg)	Site	35/39 (89.7%)	0.23 - 0.26	0.13 - 0.64	Gehan Test	0.0227	-1.645	0.509	Yes	Normal 95% UPL(t)	0.36	9
				Background	12/12 (100%)	--	0.16 - 0.34								
			Nickel (mg/kg)	Site	39/39 (100%)	--	11 - 47	WMW Test (w/out NDs)	-1.81	-1.645	< 0.05	No	Normal 95% UPL(t)	49	0
				Background	12/12 (100%)	--	34 - 50								
			Potassium (mg/kg)	Site	39/39 (100%)	--	640 - 3,200	WMW Test (w/out NDs)	-0.633	-1.645	0.263	Yes	Normal 95% UPL(t)	3,100	1
				Background	12/12 (100%)	--	2,000 - 3,100								
			Selenium (mg/kg)	Site	23/39 (59.0%)	4.2 - 8.9	0.40 - 6.2	N/A	--	--	--	--	--	--	23
				Background	0/12 (0.0%)	5.7 - 8.4	--								
			Silver (mg/kg)	Site	39/39 (100%)	--	0.31 - 1.5	WMW Test (w/out NDs)	0.0999	-1.645	0.54	Yes	WH Gamma 95% UPL	1.5	1
				Background	12/12 (100%)	--	0.30 - 1.1								
			Sodium (mg/kg)	Site	10/39 (25.6%)	600 - 1,300	210 - 920	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	850	1
				Background	5/12 (41.7%)	910 - 1,100	240 - 760								
			Thallium (mg/kg)	Site	17/39 (43.6%)	3.9 - 5.9	0.75 - 4.6	Gehan Test	-0.744	-1.645	0.229	Yes	HW Gamma 95% UPL	3.0	3
				Background	12/12 (100%)	--	0.99 - 3.3								
			Vanadium (mg/kg)	Site	39/39 (100%)	--	13 - 39	WMW Test (w/out NDs)	-0.944	-1.645	0.173	Yes	Normal 95% UPL(t)	39	2
				Background	12/12 (100%)	--	26 - 38								
			Vanadium (mg/kg) No Outliers	Site	39/39 (100%)	--	13 - 39	WMW Test (w/out NDs)	-0.585	-1.645	0.279	Yes	Normal 95% UPL(t)	37	3
				Background	11/11 (100%)	--	26 - 37								
			Zinc (mg/kg)	Site	39/39 (100%)	--	450 - 5,400	WMW Test (w/out NDs)	5.207	-1.645	1	Yes	Normal 95% UPL(t)	320	39
				Background	12/12 (100%)	--	170 - 300								

Table A-2
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OU5 Baseline Human Health Risk Assessment
DePue Lake, DePue, Illinois

								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Wildlife Workers & Hunters (2)	Depth-weighted Sediment	Miscellaneous	Total Organic Carbon (mg/kg)	Site	39/39 (100%)	--	11,000 - 120,000	WMW Test (w/out NDs)	2.143	-1.645	0.984	Yes	Nonparametric 95% UPL	37,000	4
				Background	12/12 (100%)	--	20,000 - 37,000								
			Total Organic Carbon (mg/kg)	Site	39/39 (100%)	--	11,000 - 120,000	WMW Test (w/out NDs)	3.163	-1.645	0.999	Yes	Normal 95% UPL(t)	25,000	22
			No Outliers	Background	10/10 (100%)	--	20,000 - 25,000								
		Miscellaneous-SPLP	Fluoride (mg/L)	Site	1/1 (100%)	--	0.32	N/A	--	--	--	--	Maximum Detect	0.29	1
				Background	1/1 (100%)	--	0.29								
		PCBs	Aroclor 1016 (mg/kg)	Site	0/1 (0.0%)	0.040	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	0.026	--								
			Aroclor 1221 (mg/kg)	Site	0/1 (0.0%)	0.058	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	0.036	--								
			Aroclor 1232 (mg/kg)	Site	0/1 (0.0%)	0.028	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	0.018	--								
			Aroclor 1242 (mg/kg)	Site	0/1 (0.0%)	0.028	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	0.018	--								
			Aroclor 1248 (mg/kg)	Site	0/1 (0.0%)	0.028	--	N/A	--	--	--	--	Maximum Detect	0.10	0
				Background	1/1 (100%)	--	0.10								
			Aroclor 1254 (mg/kg)	Site	1/1 (100%)	--	0.025	N/A	--	--	--	--	Maximum Detect	0.087	0
				Background	1/1 (100%)	--	0.087								
			Aroclor 1260 (mg/kg)	Site	0/1 (0.0%)	0.028	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	0.018	--								
			Total PCBs (mg/kg)	Site	1/1 (100%)	--	0.040	N/A	--	--	--	--	Maximum Detect	0.18	0
				Background	1/1 (100%)	--	0.18								
		Pesticides/Herbicides	4,4'-DDD (ug/kg)	Site	1/1 (100%)	--	3.1	N/A	--	--	--	--	Maximum Detect	3.3	0
				Background	1/1 (100%)	--	3.3								
			4,4'-DDE (ug/kg)	Site	1/1 (100%)	--	2.5	N/A	--	--	--	--	Maximum Detect	8.6	0
				Background	1/1 (100%)	--	8.6								
			4,4'-DDT (ug/kg)	Site	1/1 (100%)	--	4.7	N/A	--	--	--	--	Maximum Detect	5.7	0
				Background	1/1 (100%)	--	5.7								
			Aldrin (ug/kg)	Site	0/1 (0.0%)	2.8	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	1.8	--								
			Alpha-BHC (ug/kg)	Site	1/1 (100%)	--	0.68	N/A	--	--	--	--	Maximum Detect	2.0	0
				Background	1/1 (100%)	--	2.0								
			Alpha-Chlordane (ug/kg)	Site	1/1 (100%)	--	2.7	N/A	--	--	--	--	Maximum Detect	1.2	1
				Background	1/1 (100%)	--	1.2								
			Beta-BHC (ug/kg)	Site	1/1 (100%)	--	2.1	N/A	--	--	--	--	Maximum Detect	1.7	1
				Background	1/1 (100%)	--	1.7								
			delta-BHC (ug/kg)	Site	1/1 (100%)	--	13	N/A	--	--	--	--	--	--	1
				Background	0/1 (0.0%)	1.8	--								
			Dieldrin (ug/kg)	Site	1/1 (100%)	--	3.4	N/A	--	--	--	--	Maximum Detect	4.9	0
				Background	1/1 (100%)	--	4.9								
			Endosulfan I (ug/kg)	Site	0/1 (0.0%)	2.8	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	1.8	--								
			Endosulfan II (ug/kg)	Site	0/1 (0.0%)	5.6	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	3.5	--								
			Endosulfan sulfate (ug/kg)	Site	0/1 (0.0%)	5.6	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	3.5	--								
			Endrin (ug/kg)	Site	0/1 (0.0%)	5.6	--	N/A	--	--	--	--	Maximum Detect	3.1	0
				Background	1/1 (100%)	--	3.1								
			Endrin aldehyde (ug/kg)	Site	0/1 (0.0%)	5.6	--	N/A	--	--	--	--	Maximum Detect	3.1	0
				Background	1/1 (100%)	--	3.1								
			Endrin ketone (ug/kg)	Site	0/1 (0.0%)	5.6	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	3.5	--								
			gamma-BHC (Lindane) (ug/kg)	Site	1/1 (100%)	--	2.8	N/A	--	--	--	--	--	--	1
				Background	0/1 (0.0%)	1.8	--								
			gamma-Chlordane (ug/kg)	Site	1/1 (100%)	--	1.3	N/A	--	--	--	--	Maximum Detect	5.5	0
				Background	1/1 (100%)	--	5.5								
			Heptachlor (ug/kg)	Site	1/1 (100%)	--	6.6	N/A	--	--	--	--	--	--	1
				Background	0/1 (0.0%)	1.8	--								
			Heptachlor epoxide (ug/kg)	Site	0/1 (0.0%)	2.8	--	N/A	--	--	--	--	Maximum Detect	4.2	0
				Background	1/1 (100%)	--	4.2								
			Methoxychlor (ug/kg)	Site	0/1 (0.0%)	28	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	18	--								
			Toxaphene (ug/kg)	Site	0/1 (0.0%)	140	--	N/A	--	--	--	--	--	--	0
				Background	0/1 (0.0%)	88	--								

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DePue Lake, DePue, Illinois

								Hypothesis Testing					BSL		
Risk Assessment Area	Depth Group	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Wildlife Workers & Hunters (2)	Depth-weighted Sediment	SVOCs	1-Methylnaphthalene (mg/kg)	Site	1/1 (100%)	--	0.0032	N/A	--	--	--	--	Maximum Detect	0.0057	0
				Background	1/1 (100%)	--	0.0057								
			2-Methylnaphthalene (mg/kg)	Site	1/1 (100%)	--	0.0054	N/A	--	--	--	--	Maximum Detect	0.014	0
				Background	1/1 (100%)	--	0.014								
			Acenaphthene (mg/kg)	Site	1/1 (100%)	--	0.011	N/A	--	--	--	--	Maximum Detect	0.016	0
				Background	1/1 (100%)	--	0.016								
			Acenaphthylene (mg/kg)	Site	1/1 (100%)	--	0.013	N/A	--	--	--	--	Maximum Detect	0.088	0
				Background	1/1 (100%)	--	0.088								
			Anthracene (mg/kg)	Site	1/1 (100%)	--	0.027	N/A	--	--	--	--	Maximum Detect	0.086	0
				Background	1/1 (100%)	--	0.086								
			Benzo(a)anthracene (mg/kg)	Site	1/1 (100%)	--	0.082	N/A	--	--	--	--	Maximum Detect	0.21	0
				Background	1/1 (100%)	--	0.21								
			Benzo(a)pyrene (mg/kg)	Site	1/1 (100%)	--	0.072	N/A	--	--	--	--	Maximum Detect	0.23	0
				Background	1/1 (100%)	--	0.23								
			Benzo(b)fluoranthene (mg/kg)	Site	1/1 (100%)	--	0.078	N/A	--	--	--	--	Maximum Detect	0.23	0
				Background	1/1 (100%)	--	0.23								
			Benzo(g,h,i)perylene (mg/kg)	Site	1/1 (100%)	--	0.056	N/A	--	--	--	--	Maximum Detect	0.20	0
				Background	1/1 (100%)	--	0.20								
			Benzo(k)fluoranthene (mg/kg)	Site	1/1 (100%)	--	0.061	N/A	--	--	--	--	Maximum Detect	0.21	0
				Background	1/1 (100%)	--	0.21								
			Chrysene (mg/kg)	Site	1/1 (100%)	--	0.10	N/A	--	--	--	--	Maximum Detect	0.25	0
				Background	1/1 (100%)	--	0.25								
			Dibenz(a,h)anthracene (mg/kg)	Site	1/1 (100%)	--	0.018	N/A	--	--	--	--	Maximum Detect	0.062	0
				Background	1/1 (100%)	--	0.062								
			Fluoranthene (mg/kg)	Site	1/1 (100%)	--	0.18	N/A	--	--	--	--	Maximum Detect	0.31	0
				Background	1/1 (100%)	--	0.31								
			Fluorene (mg/kg)	Site	1/1 (100%)	--	0.016	N/A	--	--	--	--	Maximum Detect	0.030	0
				Background	1/1 (100%)	--	0.030								
			Indeno(1,2,3-cd)pyrene (mg/kg)	Site	1/1 (100%)	--	0.054	N/A	--	--	--	--	Maximum Detect	0.22	0
				Background	1/1 (100%)	--	0.22								
			Naphthalene (mg/kg)	Site	0/1 (0.0%)	0.014	--	N/A	--	--	--	--	Maximum Detect	0.020	0
				Background	1/1 (100%)	--	0.020								
			Phenanthrene (mg/kg)	Site	1/1 (100%)	--	0.074	N/A	--	--	--	--	Maximum Detect	0.10	0
				Background	1/1 (100%)	--	0.10								
			Pyrene (mg/kg)	Site	1/1 (100%)	--	0.19	N/A	--	--	--	--	Maximum Detect	0.39	0
				Background	1/1 (100%)	--	0.39								
			Total PAHs (mg/kg)	Site	1/1 (100%)	--	1.0	N/A	--	--	--	--	Maximum Detect	2.7	0
				Background	1/1 (100%)	--	2.7								

Table A-3
Hypothesis Testing and Background Screening Levels - Surface Water
OU5 Baseline Human Health Risk Assessment
DePue Lake, DePue, Illinois

Risk Assessment Area	Filtered (Y/N)	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Hypothesis Testing					BSL		
								Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Lake-wide	No	Metals	Aluminum (mg/L)	Site	18/18 (100%)	--	0.089 - 2.0	N/A	--	--	--	--	Maximum Detect	4.8	0
				Background	4/4 (100%)	--	1.9 - 4.8								
			Antimony (mg/L)	Site	0/18 (0.0%)	0.010 - 0.010	--	N/A	--	--	--	--	--	--	0
				Background	0/4 (0.0%)	0.0065 - 0.010	--								
			Arsenic (mg/L)	Site	0/17 (0.0%)	0.0028 - 0.010	--	N/A	--	--	--	--	--	--	0
				Background	0/4 (0.0%)	0.0028 - 0.010	--								
			Barium (mg/L)	Site	18/18 (100%)	--	0.037 - 0.10	N/A	--	--	--	--	Maximum Detect	0.092	1
				Background	4/4 (100%)	--	0.067 - 0.092								
			Beryllium (mg/L)	Site	14/18 (77.8%)	0.00020 - 0.00040	0.00022 - 0.00059	N/A	--	--	--	--	Maximum Detect	0.00058	1
				Background	3/4 (75.0%)	0.00020	0.00021 - 0.00058								
			Cadmium (mg/L)	Site	9/18 (50.0%)	0.00050 - 0.0050	0.00066 - 0.0072	N/A	--	--	--	--	--	--	9
				Background	0/4 (0.0%)	0.00050 - 0.0050	--								
			Calcium (mg/L)	Site	18/18 (100%)	--	63 - 190	N/A	--	--	--	--	Maximum Detect	70	10
				Background	4/4 (100%)	--	65 - 70								
			Chromium (mg/L)	Site	11/18 (61.1%)	0.00050 - 0.010	0.00092 - 0.0043	N/A	--	--	--	--	Maximum Detect	0.011	0
				Background	4/4 (100%)	--	0.0036 - 0.011								
			Cobalt (mg/L)	Site	15/18 (83.3%)	0.0016 - 0.0016	0.00098 - 0.011	N/A	--	--	--	--	Maximum Detect	0.0031	2
				Background	3/4 (75.0%)	0.0016	0.0019 - 0.0031								
			Copper (mg/L)	Site	18/18 (100%)	--	0.0029 - 0.057	N/A	--	--	--	--	Maximum Detect	0.0099	7
				Background	4/4 (100%)	--	0.0041 - 0.0099								
			Cyanide (mg/L)	Site	16/18 (88.9%)	0.011 - 0.017	0.0043 - 0.083	N/A	--	--	--	--	Maximum Detect	0.036	6
				Background	2/4 (50.0%)	0.0012 - 0.0012	0.032 - 0.036								
			Iron (mg/L)	Site	18/18 (100%)	--	0.14 - 3.2	N/A	--	--	--	--	Maximum Detect	6.9	0
				Background	4/4 (100%)	--	2.1 - 6.9								
			Lead (mg/L)	Site	17/18 (94.4%)	0.0021	0.0057 - 0.072	N/A	--	--	--	--	Maximum Detect	0.013	9
				Background	4/4 (100%)	--	0.0054 - 0.013								
			Magnesium (mg/L)	Site	18/18 (100%)	--	24 - 100	N/A	--	--	--	--	Maximum Detect	32	8
				Background	4/4 (100%)	--	24 - 32								
			Manganese (mg/L)	Site	18/18 (100%)	--	0.092 - 1.4	N/A	--	--	--	--	Maximum Detect	0.23	9
				Background	4/4 (100%)	--	0.15 - 0.23								
			Mercury (mg/L)	Site	1/18 (5.6%)	0.00010 - 0.00010	0.00018	N/A	--	--	--	--	--	--	1
				Background	0/4 (0.0%)	0.00010 - 0.00010	--								
			Nickel (mg/L)	Site	17/18 (94.4%)	0.0011	0.0039 - 0.0083	N/A	--	--	--	--	Maximum Detect	0.011	0
				Background	4/4 (100%)	--	0.0067 - 0.011								
			Potassium (mg/L)	Site	18/18 (100%)	--	5.2 - 13	N/A	--	--	--	--	Maximum Detect	5.2	17
				Background	4/4 (100%)	--	5.0 - 5.2								
			Selenium (mg/L)	Site	0/18 (0.0%)	0.0022 - 0.0050	--	N/A	--	--	--	--	--	--	0
				Background	0/4 (0.0%)	0.0033 - 0.0050	--								
			Silver (mg/L)	Site	0/18 (0.0%)	0.00030 - 0.0050	--	N/A	--	--	--	--	--	--	0
				Background	0/4 (0.0%)	0.00030 - 0.0050	--								
			Sodium (mg/L)	Site	18/18 (100%)	--	44 - 200	N/A	--	--	--	--	Maximum Detect	58	9
				Background	4/4 (100%)	--	43 - 58								
			Thallium (mg/L)	Site	0/18 (0.0%)	0.0036 - 0.0040	--	N/A	--	--	--	--	--	--	0
				Background	0/4 (0.0%)	0.0036 - 0.0040	--								
			Vanadium (mg/L)	Site	18/18 (100%)	--	0.00056 - 0.0070	N/A	--	--	--	--	Maximum Detect	0.014	0
				Background	4/4 (100%)	--	0.0073 - 0.014								
			Zinc (mg/L)	Site	18/18 (100%)	--	0.032 - 1.8	N/A	--	--	--	--	Maximum Detect	0.064	17
				Background	4/4 (100%)	--	0.019 - 0.064								

Table A-3
Hypothesis Testing and Background Screening Levels - Surface Water
OU5 Baseline Human Health Risk Assessment
DePue Lake, DePue, Illinois

Risk Assessment Area	Filtered (Y/N)	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Hypothesis Testing					BSL		
								Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Lake-wide	No	Miscellaneous	Ammonia (mg/L)	Site	18/18 (100%)	--	0.062 - 36	N/A	--	--	--	--	Maximum Detect	0.079	17
				Background	1/4 (25.0%)	0.10 - 0.10	0.079								
			Chloride (mg/L)	Site	18/18 (100%)	--	35 - 340	N/A	--	--	--	--	Maximum Detect	100	1
				Background	4/4 (100%)	--	68 - 100								
			Conductivity (ms/cm)	Site	18/18 (100%)	--	0.13 - 0.91	N/A	--	--	--	--	Maximum Detect	0.77	11
				Background	4/4 (100%)	--	0.64 - 0.77								
			Dissolved Oxygen (mg/L)	Site	18/18 (100%)	--	6.3 - 17	N/A	--	--	--	--	Maximum Detect	18	0
				Background	4/4 (100%)	--	6.8 - 18								
			Fluoride (mg/L)	Site	18/18 (100%)	--	0.26 - 0.88	N/A	--	--	--	--	Maximum Detect	0.50	1
				Background	4/4 (100%)	--	0.30 - 0.50								
			Hardness (mg/L)	Site	18/18 (100%)	--	260 - 900	N/A	--	--	--	--	Maximum Detect	310	9
				Background	4/4 (100%)	--	260 - 310								
			Nitrate as N (mg/L)	Site	14/18 (77.8%)	0.050 - 0.050	0.20 - 17	N/A	--	--	--	--	Maximum Detect	1.5	1
				Background	3/4 (75.0%)	0.050	0.41 - 1.5								
			Nitrite as N (mg/L)	Site	0/18 (0.0%)	0.050 - 0.050	--	N/A	--	--	--	--	--	--	0
				Background	0/4 (0.0%)	0.050 - 0.050	--								
			pH (SU)	Site	18/18 (100%)	--	7.9 - 8.9	N/A	--	--	--	--	Maximum Detect	9.3	0
				Background	4/4 (100%)	--	8.5 - 9.3								
			Phosphate (mg/L)	Site	6/18 (33.3%)	0.050 - 0.050	0.22 - 1.7	N/A	--	--	--	--	--	--	6
				Background	0/4 (0.0%)	0.050 - 0.050	--								
			Phosphorus, Total (mg/L)	Site	6/18 (33.3%)	0.32 - 0.46	0.57 - 3.5	N/A	--	--	--	--	Maximum Detect	0.63	4
				Background	2/4 (50.0%)	0.53 - 0.64	0.53 - 0.63								
			Sulfate (mg/L)	Site	18/18 (100%)	--	54 - 800	N/A	--	--	--	--	Maximum Detect	78	16
				Background	4/4 (100%)	--	60 - 78								
			Sulfide (mg/L)	Site	2/18 (11.1%)	1.0 - 1.0	0.60 - 0.60	N/A	--	--	--	--	--	--	2
				Background	0/4 (0.0%)	1.0 - 1.0	--								
			Temperature (°C)	Site	18/18 (100%)	--	14 - 21	N/A	--	--	--	--	Maximum Detect	18	8
				Background	4/4 (100%)	--	9.1 - 18								
			Total Alkalinity (mg/L)	Site	18/18 (100%)	--	190 - 400	N/A	--	--	--	--	Maximum Detect	210	9
				Background	4/4 (100%)	--	160 - 210								
			Total Carbon (mg/L)	Site	18/18 (100%)	--	21 - 56	N/A	--	--	--	--	Maximum Detect	29	11
				Background	4/4 (100%)	--	5.9 - 29								
			Total Kjeldahl Nitrogen (mg/L	Site	18/18 (100%)	--	0.84 - 26	N/A	--	--	--	--	Maximum Detect	0.90	17
				Background	2/4 (50.0%)	0.87 - 0.87	0.55 - 0.90								
			Total Organic Carbon (mg/L)	Site	18/18 (100%)	--	3.6 - 10	N/A	--	--	--	--	Maximum Detect	7.9	6
				Background	4/4 (100%)	--	5.2 - 7.9								
			Total Water Depth (ft)	Site	18/18 (100%)	--	0.30 - 4.8	N/A	--	--	--	--	Maximum Detect	2.0	6
				Background	4/4 (100%)	--	0.60 - 2.0								
			Turbidity (NTU)	Site	18/18 (100%)	--	29 - 260	N/A	--	--	--	--	Maximum Detect	260	0
				Background	4/4 (100%)	--	190 - 260								

Table A-3
Hypothesis Testing and Background Screening Levels - Surface Water
OU5 Baseline Human Health Risk Assessment
DePue Lake, DePue, Illinois

Risk Assessment Area	Filtered (Y/N)	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Hypothesis Testing					BSL		
								Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
Lake-wide	Yes	Metals	Aluminum (mg/L)	Site	7/18 (38.9%)	0.0092 - 0.20	0.015 - 0.16	N/A	--	--	--	--	Maximum Detect	0.040	3
				Background	2/4 (50.0%)	0.0092 - 0.0092	0.032 - 0.040								
			Antimony (mg/L)	Site	1/18 (5.6%)	0.0015 - 0.0029	0.0036	N/A	--	--	--	--	--	--	1
				Background	0/4 (0.0%)	0.0015 - 0.0029	--								
			Arsenic (mg/L)	Site	10/17 (58.8%)	0.010 - 0.010	0.0047 - 0.0088	N/A	--	--	--	--	Maximum Detect	0.0073	1
				Background	4/4 (100%)	--	0.0035 - 0.0073								
			Barium (mg/L)	Site	18/18 (100%)	--	0.021 - 0.061	N/A	--	--	--	--	Maximum Detect	0.054	6
				Background	4/4 (100%)	--	0.047 - 0.054								
			Beryllium (mg/L)	Site	4/18 (22.2%)	0.00020 - 0.00020	0.00020 - 0.00023	N/A	--	--	--	--	Maximum Detect	0.00022	1
				Background	1/4 (25.0%)	0.00020 - 0.00020	0.00022								
			Cadmium (mg/L)	Site	0/18 (0.0%)	0.00020 - 0.00050	--	N/A	--	--	--	--	--	--	0
				Background	0/4 (0.0%)	0.00020 - 0.00050	--								
			Calcium (mg/L)	Site	18/18 (100%)	--	63 - 200	N/A	--	--	--	--	Maximum Detect	71	9
				Background	4/4 (100%)	--	56 - 71								
			Chromium (mg/L)	Site	0/18 (0.0%)	0.00050 - 0.00070	--	N/A	--	--	--	--	Maximum Detect	0.00060	0
				Background	1/4 (25.0%)	0.00050 - 0.00070	0.00060								
			Cobalt (mg/L)	Site	1/18 (5.6%)	0.00050 - 0.0016	0.0085	N/A	--	--	--	--	--	--	1
				Background	0/4 (0.0%)	0.00050 - 0.0016	--								
			Copper (mg/L)	Site	13/18 (72.2%)	0.00090 - 0.00090	0.00096 - 0.0064	N/A	--	--	--	--	Maximum Detect	0.0018	10
				Background	3/4 (75.0%)	0.00090	0.0011 - 0.0018								
			Iron (mg/L)	Site	0/18 (0.0%)	0.0098 - 0.011	--	N/A	--	--	--	--	--	--	0
				Background	0/4 (0.0%)	0.0098 - 0.011	--								
			Lead (mg/L)	Site	1/18 (5.6%)	0.0014 - 0.0021	0.0027	N/A	--	--	--	--	--	--	1
				Background	0/4 (0.0%)	0.0014 - 0.0021	--								
			Magnesium (mg/L)	Site	18/18 (100%)	--	27 - 100	N/A	--	--	--	--	Maximum Detect	34	8
				Background	4/4 (100%)	--	24 - 34								
			Manganese (mg/L)	Site	18/18 (100%)	--	0.011 - 1.4	N/A	--	--	--	--	Maximum Detect	0.011	18
				Background	3/4 (75.0%)	0.010	0.0015 - 0.011								
			Mercury (mg/L)	Site	0/18 (0.0%)	0.00010 - 0.00010	--	N/A	--	--	--	--	--	--	0
				Background	0/4 (0.0%)	0.00010 - 0.00010	--								
			Nickel (mg/L)	Site	18/18 (100%)	--	0.0030 - 0.0080	N/A	--	--	--	--	Maximum Detect	0.0051	3
				Background	4/4 (100%)	--	0.0030 - 0.0051								
			Potassium (mg/L)	Site	18/18 (100%)	--	6.1 - 15	N/A	--	--	--	--	Maximum Detect	6.1	18
				Background	4/4 (100%)	--	5.2 - 6.1								
			Selenium (mg/L)	Site	12/18 (66.7%)	0.0033 - 0.0033	0.0026 - 0.0090	N/A	--	--	--	--	Maximum Detect	0.0034	6
				Background	1/4 (25.0%)	0.0018 - 0.0033	0.0034								
			Silver (mg/L)	Site	0/18 (0.0%)	0.00050 - 0.00060	--	N/A	--	--	--	--	--	--	0
				Background	0/4 (0.0%)	0.00050 - 0.00060	--								
			Sodium (mg/L)	Site	18/18 (100%)	--	49 - 200	N/A	--	--	--	--	Maximum Detect	63	8
				Background	4/4 (100%)	--	48 - 63								
			Thallium (mg/L)	Site	0/18 (0.0%)	0.0033 - 0.0040	--	N/A	--	--	--	--	--	--	0
				Background	0/4 (0.0%)	0.0033 - 0.0040	--								
			Vanadium (mg/L)	Site	16/18 (88.9%)	0.00040 - 0.020	0.00053 - 0.0036	N/A	--	--	--	--	Maximum Detect	0.0053	0
				Background	4/4 (100%)	--	0.0039 - 0.0053								
			Zinc (mg/L)	Site	17/18 (94.4%)	0.0020	0.0011 - 0.87	N/A	--	--	--	--	--	--	17
				Background	0/4 (0.0%)	0.00040 - 0.020	--								

Table A-4
Hypothesis Testing and Background Screening Levels - Fish Fillets
OU5 Baseline Human Health Risk Assessment
DePue Lake, DePue, Illinois

							Hypothesis Testing					BSL		
Risk Assessment Area	Parameter Group	Parameter (Units)	Data Group	%FOD	Range of Non-detects	Range of Detects	Selected Hypothesis Test	Test Statistic	Critical Value	p-value	Evidence of Impact?	Statistic Used for BSL	BSL	Total Number of BSL Exceedances
DePue Lake (Lake-wide)	Metals	Aluminum (mg/kg)	Site	8/45 (17.8%)	18 - 20	1.2 - 4.7	Gehan Test	-0.869	-1.645	0.192	Yes	Nonparametric 95% UPL	20	0
			Background	8/15 (53.3%)	18 - 20	1.4 - 11								
		Antimony (mg/kg)	Site	0/45 (0.0%)	5.5 - 6.0	--	N/A	--	--	--	--	--	--	0
			Background	0/15 (0.0%)	5.5 - 6.0	--								
		Arsenic (mg/kg)	Site	3/45 (6.7%)	0.91 - 1.0	0.28 - 0.35	N/A	--	--	--	--	Maximum Detect	0.43	0
			Background	3/15 (20.0%)	0.92 - 1.0	0.27 - 0.43								
		Barium (mg/kg)	Site	32/45 (71.1%)	18 - 20	0.046 - 19	Gehan Test	-0.901	-1.645	0.184	Yes	Nonparametric 95% UPL	19	0
			Background	13/15 (86.7%)	18 - 19	0.094 - 1.3								
		Beryllium (mg/kg)	Site	32/45 (71.1%)	0.45 - 0.50	0.014 - 0.031	N/A	--	--	--	--	95% Kaplan-Meier UPL(t)	0.026	7
			Background	6/15 (40.0%)	0.45 - 0.50	0.019 - 0.026								
		Cadmium (mg/kg)	Site	0/45 (0.0%)	0.45 - 0.50	--	N/A	--	--	--	--	Maximum Detect	0.12	0
			Background	1/15 (6.7%)	0.45 - 0.50	0.12								
		Calcium (mg/kg)	Site	45/45 (100%)	--	83 - 7,100	WMW Test (w/out NDs)	-1.758	-1.645	< 0.05	No	HW Gamma 95% UPL	5,700	1
			Background	15/15 (100%)	--	150 - 4,600								
		Chromium (mg/kg)	Site	16/45 (35.6%)	0.91 - 1.0	0.13 - 0.39	N/A	--	--	--	--	Maximum Detect	0.34	2
			Background	1/15 (6.7%)	0.92 - 1.0	0.34								
		Cobalt (mg/kg)	Site	0/45 (0.0%)	4.6 - 5.0	--	N/A	--	--	--	--	--	--	0
			Background	0/15 (0.0%)	4.6 - 5.0	--								
		Copper (mg/kg)	Site	42/45 (93.3%)	2.4 - 2.5	0.19 - 0.90	Gehan Test	-1.855	-1.645	< 0.05	No	Nonparametric 95% UPL	2.5	0
			Background	14/15 (93.3%)	2.5	0.22 - 1.4								
		Iron (mg/kg)	Site	22/45 (48.9%)	9.3 - 12	3.9 - 18	Gehan Test	-2.333	-1.645	< 0.05	No	95% Kaplan-Meier UPL(t)	25	0
			Background	9/15 (60.0%)	9.5 - 11	7.2 - 26								
		Lead (mg/kg)	Site	8/45 (17.8%)	0.91 - 1.0	0.13 - 0.22	N/A	--	--	--	--	Maximum Detect	0.21	2
			Background	2/15 (13.3%)	0.92 - 1.0	0.20 - 0.21								
		Magnesium (mg/kg)	Site	45/45 (100%)	--	160 - 480	WMW Test (w/out NDs)	-2.979	-1.645	< 0.05	No	HW Gamma 95% UPL	500	0
			Background	15/15 (100%)	--	250 - 590								
		Manganese (mg/kg)	Site	43/45 (95.6%)	1.4 - 1.5	0.078 - 3.9	Gehan Test	-0.967	-1.645	0.167	Yes	HW Gamma 95% UPL	2.2	3
			Background	15/15 (100%)	--	0.16 - 2.8								
		Manganese (mg/kg)	Site	43/45 (95.6%)	1.4 - 1.5	0.078 - 3.9	Gehan Test	-0.282	-1.645	0.389	Yes	HW Gamma 95% UPL	1.1	7
		No Outliers	Background	13/13 (100%)	--	0.16 - 1.2								
		Mercury (mg/kg)	Site	21/45 (46.7%)	0.079 - 0.10	0.038 - 0.16	Gehan Test	-1.376	-1.645	0.0845	Yes	95% Kaplan-Meier UPL(t)	0.14	1
			Background	11/15 (73.3%)	0.080 - 0.096	0.042 - 0.17								
		Nickel (mg/kg)	Site	5/45 (11.1%)	3.7 - 4.0	0.041 - 0.25	N/A	--	--	--	--	Maximum Detect	0.070	4
			Background	2/15 (13.3%)	3.7 - 4.0	0.050 - 0.070								
		Potassium (mg/kg)	Site	45/45 (100%)	--	1,800 - 6,100	WMW Test (w/out NDs)	-1.477	-1.645	0.0699	Yes	Normal 95% UPL(t)	6,600	0
			Background	15/15 (100%)	--	2,600 - 6,900								
		Selenium (mg/kg)	Site	41/45 (91.1%)	3.2 - 3.4	0.62 - 1.8	Gehan Test	-3.683	-1.645	< 0.05	No	Normal 95% UPL(t)	2.2	0
			Background	15/15 (100%)	--	1.1 - 2.4								
		Silver (mg/kg)	Site	0/45 (0.0%)	0.91 - 1.0	--	N/A	--	--	--	--	--	--	0
			Background	0/15 (0.0%)	0.92 - 1.0	--								
		Sodium (mg/kg)	Site	45/45 (100%)	--	410 - 1,600	WMW Test (w/out NDs)	-2.706	-1.645	< 0.05	No	Normal 95% UPL(t)	1,500	1
			Background	15/15 (100%)	--	550 - 1,600								
		Thallium (mg/kg)	Site	0/45 (0.0%)	2.3 - 2.5	--	N/A	--	--	--	--	--	--	0
			Background	0/15 (0.0%)	2.3 - 2.5	--								
		Vanadium (mg/kg)	Site	2/45 (4.4%)	4.6 - 5.0	0.041 - 0.050	N/A	--	--	--	--	Maximum Detect	0.032	2
			Background	3/15 (20.0%)	4.6 - 5.0	0.028 - 0.032								
		Zinc (mg/kg)	Site	45/45 (100%)	--	3.2 - 29	WMW Test (w/out NDs)	-1.579	-1.645	0.0572	Yes	Normal 95% UPL(t)	20	1
			Background	15/15 (100%)	--	5.0 - 24								